

In the
COMPANY OF TREES

*Honoring Our Connection to
the Sacred Power, Beauty,
and Wisdom of Trees*

ANDREA SARUBBI FERESHTEH

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Adams Media
New York London Toronto Sydney New Delhi



Adams Media

An Imprint of Simon & Schuster, Inc.

57 Littlefield Street

Avon, Massachusetts 02322

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First Adams Media hardcover edition January 2019

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Interior design by Michelle Kelly

Interior images © Getty Images, 123RF, and Wikimedia; additional details listed at the end of this book

Manufactured in the United States of America

10 9 8 7 6 5 4 3 2 1

Library of Congress Cataloging-in-Publication Data has been applied for.

ISBN 978-1-5072-0954-7

ISBN 978-1-5072-0955-4 (ebook)

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Dedication
For Mark, Luke, and Jack



Acknowledgments

I am so grateful for the opportunity to share my love for nature and connection with Spirit through writing this book. Thank you to Rebecca Tarr Thomas and the team at Adams Media for finding me, believing in my writing, and being an awesome group of editors to work with on the publication of this book. Thanks also to Lindsay Edgecombe for expert guidance through the publishing process.

My love for nature grew as a child, fostered by endless outdoor exploration with my amazing family, time spent together reading *National Geographic* or watching nature programs on PBS. For their constant encouragement of my writing—from childhood diaries to journalism school and in my career—I owe my foundation and immense gratitude to my parents and sister: Linda, Fil, and Christina.

To my husband, Mark, whose unwavering support and belief in my writing has given me such confidence, and whose partnership on this adventure of parenting three precious souls is a gift. Thank you for everything.

To my village of sister friends who are a steadfast source of strength, support, humor, and connection, thank you.

And to the writers whose work over the years has nourished, informed, challenged, and inspired me, thank you for sharing your wisdom, encouragement, and fearless example of writing from the heart.

Introduction

For more than three hundred million years, trees have graced the earth's surface. Extending their roots into the soil and firmly establishing a hold on this orbiting sphere, they rise with woody trunks toward the heavens. They reach their branches up toward the light and sprout all manner of leaves, blossoming flowers, ripening fruit, and needles in every shade of the rainbow. They support a dynamic and diverse range of fauna and are the foundation of vibrant ecosystems, silently adapting to their environment and thriving in synchronicity with the earth's many cycles.

Since the dawn of humanity, people have had an intimate relationship with trees. We've used them for practical purposes, seeking shade and shelter under lush canopies of leaves, utilizing the wood for all manner of products—tools, fuel for firewood, and construction materials for ships, furniture, musical instruments, and more—and consuming their fruits, sap, resin, and nuts. We've also honored and revered trees as links between heaven and earth, viewing them as homes for deities and symbolic representations of sacred beings. Trees have inspired art, music, and poetry and are an integral part of the human experience and landscape.

It's easy to drive through a neighborhood street or walk through a city park and just accept that trees are there, silent sentinels watching over human activity below. But we would be remiss to forget the vital role trees play in the earth's ecosystem and the long-held cultural beliefs and rituals involving trees that have existed throughout the ages. As humanity is rediscovering the magic of forested lands, the wisdom of trees, and the eternal lessons inherent in nature, an illuminated ancient awakening reminds us that we evolved and exist as part of a complex global ecosystem that has endured in a delicate dance of balance for millennia.

While many indigenous cultures have long understood the value of living harmoniously with forested areas, more recent efforts to combat deforestation, overfarming, and the dangers of unchecked fires are developing in a concerted effort to preserve and protect the world's trees. As more and more science emerges about the innumerable benefits trees and forested areas provide, it is more important than ever to contemplate how humanity can take efforts to exist in a thoughtful way with respect and regard for the incredibly complex plant and animal life that surrounds us.

Experiencing the seasons through trees is a lesson in life—witnessing the first delicate buds of spring that burst forth and bloom fully in a vibrant spectacle is a visual allegory for the fullness of life. The waning and spectacular process of leaves turning color and dropping to become nutrient-rich fertilizer for the next cycle is a reminder that every new beginning comes from another beginning's end. The many cultural celebrations that embrace the symbolism of trees are a testimony to the enduring spirit of hope and promise of renewal that exists across lands and traditions.

In the Company of Trees explores humanity's appreciation for and knowledge of trees throughout the ages. From practical uses to symbolic rituals around the globe, trees are a source of wisdom and mystery and a life-giving resource to cherish. From deserts to rainforests, vast coniferous forests and lone arboreal landmarks, trees are our companions, partners, and quiet teachers in this terrestrial existence. Come for a walk in the woods and explore trees and sacred groves around the world, on every continent, and as part of cultures across the globe. The forest awaits.





“Trees are as close to
immortality as the
rest of us ever come.”

—Karen Joy Fowler, American author

Wollemi Pine: A Living Fossil

In 1994, while walking with friends deep in a rugged, undisturbed forest in Australia's Blue Mountains west of Sydney, National Parks and Wildlife Service officer David Noble came across an unusual pine branch. Taken with its unique appearance, which featured concave bowing branches and bark that resembled bubbling chocolate, Noble brought the branch home to assess its identity. A team of botanists studying the plant sample quickly realized they had one of the most significant historical botanical discoveries on their hands when they confirmed that the branch was a living fossil of the Wollemi pine, believed to have been extinct for more than two million years. With fossil records dating to the time of the dinosaurs, the wild Wollemi pines are one of the oldest and rarest tree species in the world. Named for Wollemi National Park where they were first discovered, the pines' namesake comes from an Aboriginal word meaning "look around you, keep your eyes open, and watch out." The Wollemi pines exist in small groves in the Blue Mountains, which are kept hidden from the public to preserve the fragile survival of this ancient species. Barely more than one hundred of the species are living today, many of which have survived for more than a thousand years. In an effort to cultivate the critically endangered species, today Wollemi pines are sold worldwide for in-home or garden use with the hope that the trees will continue to thrive and exist as more than just fossils for years to come.









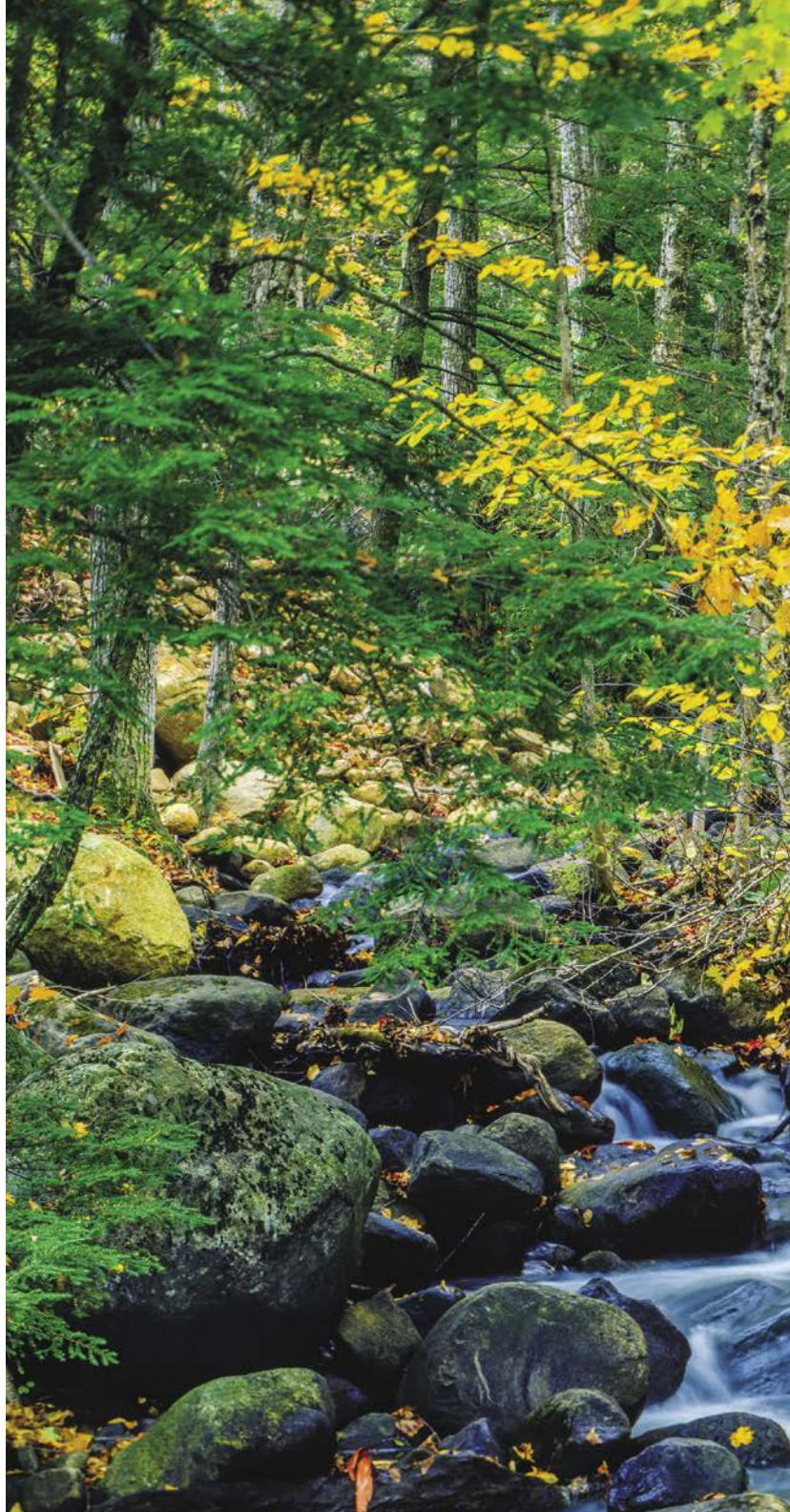
Inhale, Exhale

Since the beginning of time, trees have created clean, fresh air through a miraculous biological process called photosynthesis. During this process, trees use the power of the sun to absorb carbon dioxide (CO_2) through tiny openings on their leaves called stomata, and they turn water consumed through their roots into chemical compounds like sugars that are used to support the tree's growth. As part of this conversion, which is crucial for sustaining life on Earth, oxygen is released by the leaves back out into the surrounding world. When trees mature to a decade old, they are capable of absorbing forty-eight pounds of CO_2 each year, and one large tree can provide a day's worth of oxygen for up to four people.

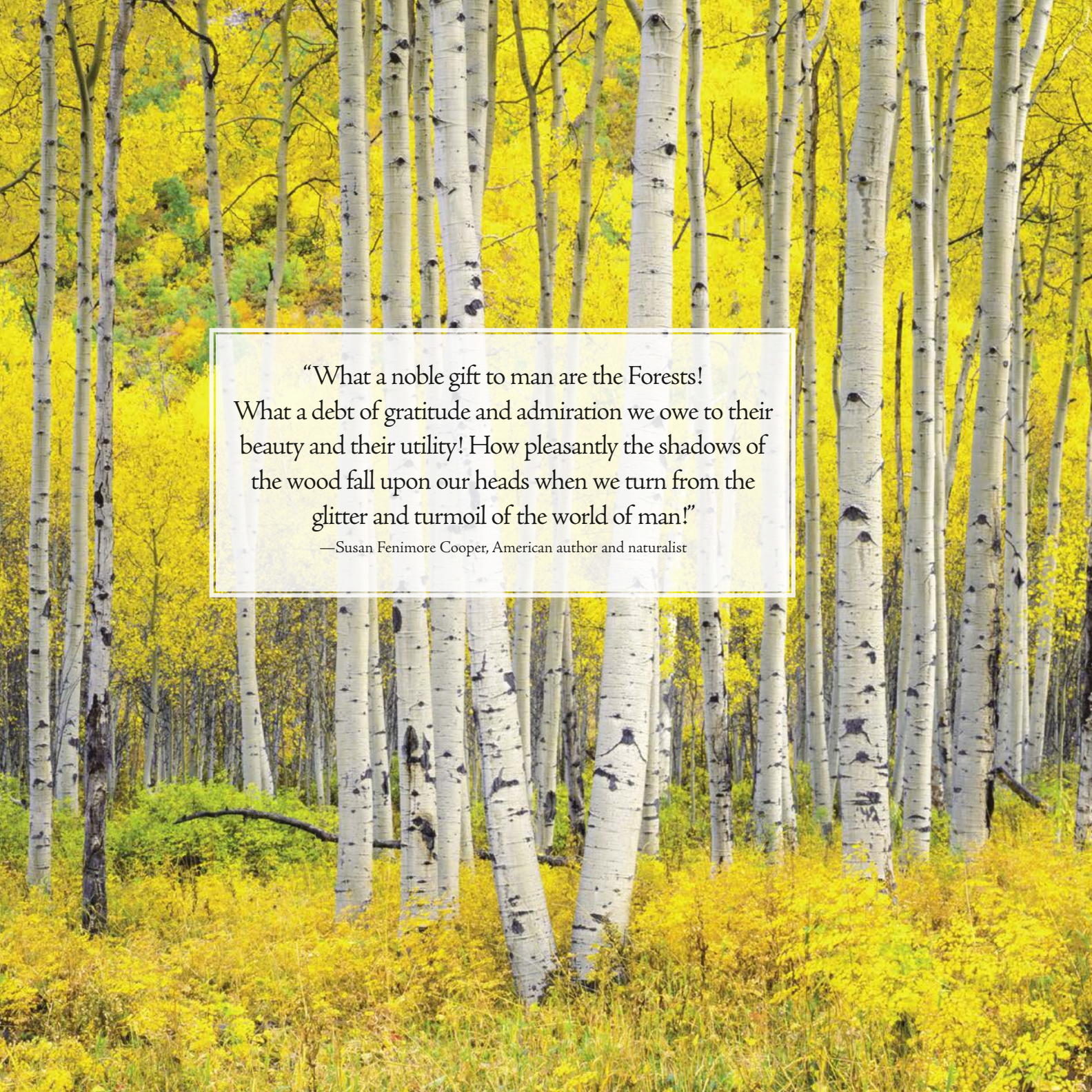
Arboreal Water Authority

A stream meandering through a grove of trees is more than just a pretty sight. While the nearby trees may appear to be passive bystanders to the aquatic life below, they are in fact active participants in fostering vibrant aquatic health and helping establish a vital source of drinking water. A forest watershed is a critical ecosystem that exists in a harmonious balance to support clean water. Trees help remove excess nutrients and pollutants from water and mitigate sediment runoff, and they provide a shady canopy that ensures a temperate water climate. Falling leaves and other arboreal detritus also provide a source of nutrient-rich matter for fish and other aquatic wildlife. Preserving a forested watershed near an urban center can support a clean source of drinking water for millions of people.

Brown's River, Underhill State Park, Vermont, US







“What a noble gift to man are the Forests!
What a debt of gratitude and admiration we owe to their
beauty and their utility! How pleasantly the shadows of
the wood fall upon our heads when we turn from the
glitter and turmoil of the world of man!”

—Susan Fenimore Cooper, American author and naturalist



The Celebration of Tu Bishvat

Long before our modern Arbor Day tree celebration, ancient Israelites honored humanity's relationship with nature through a tradition known as Tu Bishvat. Falling on the fifteenth day of the Jewish month of Shevat, which usually occurs in mid-January through mid-February, the holiday began as a way to keep track of fruit offerings. First mentioned in the Mishnah, or Jewish law, which dates back to 200 C.E., Tu Bishvat was established to help rabbis monitor crop years and account for timely tithing of fruits that were given as offerings at the Temple in Jerusalem. Marking the beginning of Israel's spring season, when trees are awakening from their winter slumber and beginning to bud, the holiday has evolved into a celebration of gratitude for nature and its cycles of renewal and rebirth. Practitioners of Judaism celebrate the holiday with a traditional Tu Bishvat seder meal featuring native fruits. The celebration is a reminder to honor God's gift of the environment and to remember humanity's responsibility to be stewards of creation and obligation to share the earth's gifts and resources with each other.

Rocky Mountains, Colorado, US

An Ancient “Tree” Alphabet

With origins dating to the third century C.E., the Ogham alphabet is an ancient Celtic form of writing in which letters are assigned a tree or plant name. Eight of the original letters of the Ogham alphabet were assigned to trees—birch, alder, willow, oak, hazel, pine, ash, and yew. Building on the tree names, scholars in the Middle Ages assigned other trees to the remaining letters, thereby creating a “tree alphabet.” Each letter is represented by a mark along a central line, like branches extending from a tree trunk, and the words are read from right to left and from bottom to the top, like a tree reaching for the sky. Inscriptions are found across Ireland and western Britain, mostly along the edges of large stone slabs that may have indicated property markings or ownership.

Ogham stone, Dingle, Ireland









Ireland's Fairy Tree

Native to Ireland, the hawthorn tree has a rich tradition and place in Irish folklore and is commonly known as the home of or gateway to the fairy world. Long used as a hedging plant, the hawthorn served as an ideal barrier for farmers thanks to its gnarled, thorny branches. Each spring, the tree unfurls blooms full of small white flowers that fill the air with a trademark scent, harkening the start of summer. As summer progresses, the tree bears fleshy fruits known as haws that are popular among birds and have long been made into jams, jellies, wines, and liquors. Because of the tree's place in Irish fairy legend, it is local custom to not disturb the hawthorn. Often farmers would roll boulders up against the tree trunk to protect it, leaving lone hawthorn trees standing solitary in fields or pastures. Even as recently as 1999, when a major roadway was being constructed from Limerick to Galway, construction was halted and ultimately rerouted so as not to disturb a legendary hawthorn tree. The tree is also known as a symbol of death—perhaps because of the scent of its flowers, which resembles that of decaying corpses. Some believe the crown of thorns used at Jesus' crucifixion was made of hawthorn branches, and tradition holds it to be bad luck to bring any branches or flowers of a hawthorn tree indoors.

County Galway, Ireland

The Dark Hedges

In the late 1700s, James Stuart, a relative of King James I of England and VI of Scotland, built Gracehill House in Northern Ireland, naming it for his wife, Grace Lynd. He also planted more than 150 beech trees along the road leading to the Georgian estate. As the trees matured, their branches entangled and intertwined, creating a visually spectacular tunnel known as the Dark Hedges. Legend has it that a ghost known as the Grey Lady haunts the Bregagh Road under the trees, vanishing when she passes the last tree. The ancient trees—many more than three hundred years old—gained recent fame after being featured as the Kingsroad in the television series *Game of Thrones*.

*“How right it is to love flowers and
the greenery of pines and ivy and
hawthorn hedges; they have been
with us from the very beginning.”*

—Vincent van Gogh, artist

The Dark Hedges, County Antrim, Northern Ireland







The Immortal Yew Trees

Among the most ancient native trees found in Ireland and England, yew trees have a life span of millennia. Considered magical in ancient times, the tree releases a gas on hot days known as taxine that has been known to cause hallucinations. An evergreen tree with poisonous leaves and small, plump red berries, the tree was often regarded as a symbol for eternal life and for the cycle of death and rebirth by druids and was later incorporated by Christians as symbolic of Christ's resurrection. The tree's branches grow down into the ground, forming new stems that then grow up and around the older tree as a separate but connected entity. Thought of as "immortal" thanks to their ability to regenerate after periods of decay, the yew grows most often in old forests and is frequently found in churchyards. An ancient yew, more than five thousand years old, that grows in the yard of St. Cynog's church in Wales is believed to be Britain's oldest tree.

St. Cynog's church, Wales

Divining the Rings

Just as a stone tossed into still water creates ripples that flow outward, concentric tree rings develop from a central point, holding untold secrets about what that plant has experienced over its lifetime. During each season of growth, a new ring is formed in a tree's woody trunk. The rings vary in thickness and opaqueness, all revealing information about the growth year in terms of weather patterns and environmental conditions. Dendrochronologists, scientists who cull tree data using clues from the tree's rings, use radiocarbon dating to measure amounts of carbon stored in tree samples, revealing the age of organic material within the tree. Dendrochronology can be used to piece together information about groups of trees, when wood originated in an area, and when human activity emerged in conjunction with the trees' growth.

*“You will find something far greater
in woods than you will find in
books. Stones and trees will teach
you that which you will never learn
from masters.”*

—St. Bernard of Clairvaux, French abbot









The Lone Joshua Tree

When U2, one of Ireland's most famous rock bands, set out to create their landmark album *The Joshua Tree*, they were inspired by the vast, desolate landscape of the American Southwest. The album's namesake, the Joshua tree, references a species named by Mormon settlers who thought the tree's silhouette resembled the image of Joshua in the Old Testament reaching his hands to the sky in prayer. On a search for the perfect Joshua tree, album photographer Anton Corbijn spotted a lone tree while the band was driving through Death Valley near Darwin, California, and captured what would become the album sleeve's defining image. His photograph of that isolated, unexpected tree became the ideal image for the album, confusing many U2 fans who assumed the tree was located in Joshua Tree National Park, which is about four hours south of its actual location. Unfortunately, the tree in the photo that was used on the album sleeve died in 2000 of natural causes at an estimated age of two hundred years old.

Joshua Tree National Park, California, US

Komorebi

A compound of the words *ko*, meaning “tree,” and *moreru*, meaning “to leak, to come through,” the Japanese word *komorebi* defines the ephemeral experience of sunlight as it filters through a canopy of tree leaves. Shards of light find their way through a patchwork of fluttering leaves to create a dancing spectacle of illumination on natural surfaces—from rocks to other plants to trails and streams.

*“The leaf of every tree brings
a message from the unseen world.
Look, every falling leaf is a blessing.”*

—Jalal ad-Din Muhammad Rumi,
thirteenth-century Persian poet







“Live in each season as it passes; breathe the air, drink the drink, taste the fruit, and resign yourself to the influence of the earth.”

—Henry David Thoreau, American author,
philosopher, environmentalist



The Peace of Forest Bathing

Developed in Japan in the 1980s, *shinrin-yoku* is translated as “taking in the forest atmosphere” or “forest bathing.” Named by officials with the Forest Agency of Japan in an effort to encourage healthier habits, forest bathing is a mindful practice. People enter a natural forest setting in an almost sacred way, with a very intentional approach to experiencing the environment through all senses. Here they pause to observe and contemplate the woodland atmosphere and allow the forest to work its magic on the spirit and soul. Scientific research confirms that spending time in a forest confers numerous health benefits including decreased levels of the stress hormone cortisol, increased levels of the body’s disease-fighting agents known as natural killer cells, increased levels of anticancer proteins, improved mental performance and creativity, and overall improvements in mood and general well-being.

Sacred Shinto Trees

In the Japanese Shinto religion, an ancient belief holds that a god descended to a high pine on a mountain and resided there in the large, old tree. Because of this, trees hold a sacred place in Japanese religious tradition, with many Shinto shrines being surrounded by trees or forests. More than fifteen species of tree are considered sacred, including various pine species known as *matsu*, *ogatama-noki* trees, the *sakaki* or *Cleyra japonica*, and bamboo. Shinto deities, known as *kami*, are represented by natural elements—trees, animals, mountains, rivers, and more—and hold a place of reverence and respect among the faithful. Twigs and leaves are traditionally offered to the god or the soul of the deceased, and pine branches are often placed at the entrance to houses at the beginning of the year to bring blessings. Sacred trees are often belted with straw ropes and decorated with white paper ornaments, markings that indicate that the tree should be protected from felling or other harm.

Fushimi Inari Shrine gates, Kyoto, Japan





二十一年一月吉日建之

元年五月吉日建之

新野





Spring Sakura

Each spring, like an explosion of fluffy cotton candy at a county fair, exquisite blooms of cherry blossoms emerge from their winter slumber. The delicate petals of the flowers that unfold from droplets along the tree branches span the full range of the pink color spectrum. When cherry blossom trees are planted in large numbers, the sight of them in bloom is a magical, ephemeral experience. Because the blossoms last for only a week to ten days under the most optimal weather conditions, witnessing cherry trees in bloom is an experience of evanescence—a fleeting moment that vanishes before being grasped. The national flower of Japan, the cherry blossom has long held cultural symbolism for the impermanence of life and its many moments that swell and crest before ebbing to the shore and fading into memory. Known as *sakura* in Japanese, the blossoms also symbolize the start of spring, rebirth, and renewal. Since the mid-1600s, the Japanese people have celebrated cherry blossom season with parties and gatherings underneath sakura trees in a tradition called *hanami*, which translates to “watching blossoms.” Celebrations continue through the evening as a romantic atmosphere blooms along with the sakura. The Japanese call experiencing the blossoms at night *yozakura*.

Mount Fuji, Japan

Crown Shyness

When you gaze up at the canopy of leaves from the forest floor beneath certain species of trees, it may first appear as if you are looking down at a river and its tributaries, winding their way through outcroppings of land. However, the blue that snakes through fluffy patches of green isn't a body of water but rather the sky, appearing to weave around tree branches in a visually captivating maze. First observed in the 1920s, scientists don't have an explanation for the phenomenon dubbed *crown shyness* in which trees appear to keep a measured distance from each other. Deliberate spaces in the canopy of trees including the lodgepole pine, black mangrove, and eucalyptus trees may occur as a way to prevent insects from spreading from tree to tree or as an evolutionary safety net, put in play to reduce injury from tree branches crashing into each other. Other scientists believe the plants can sense light reflecting off a neighboring tree and that they intentionally keep a safe distance from each other to avoid shady conditions and maximize their exposure to sunlight.

“Trees are poems that the earth writes upon the sky.”

—Khalil Gibran,

Lebanese-American poet and writer





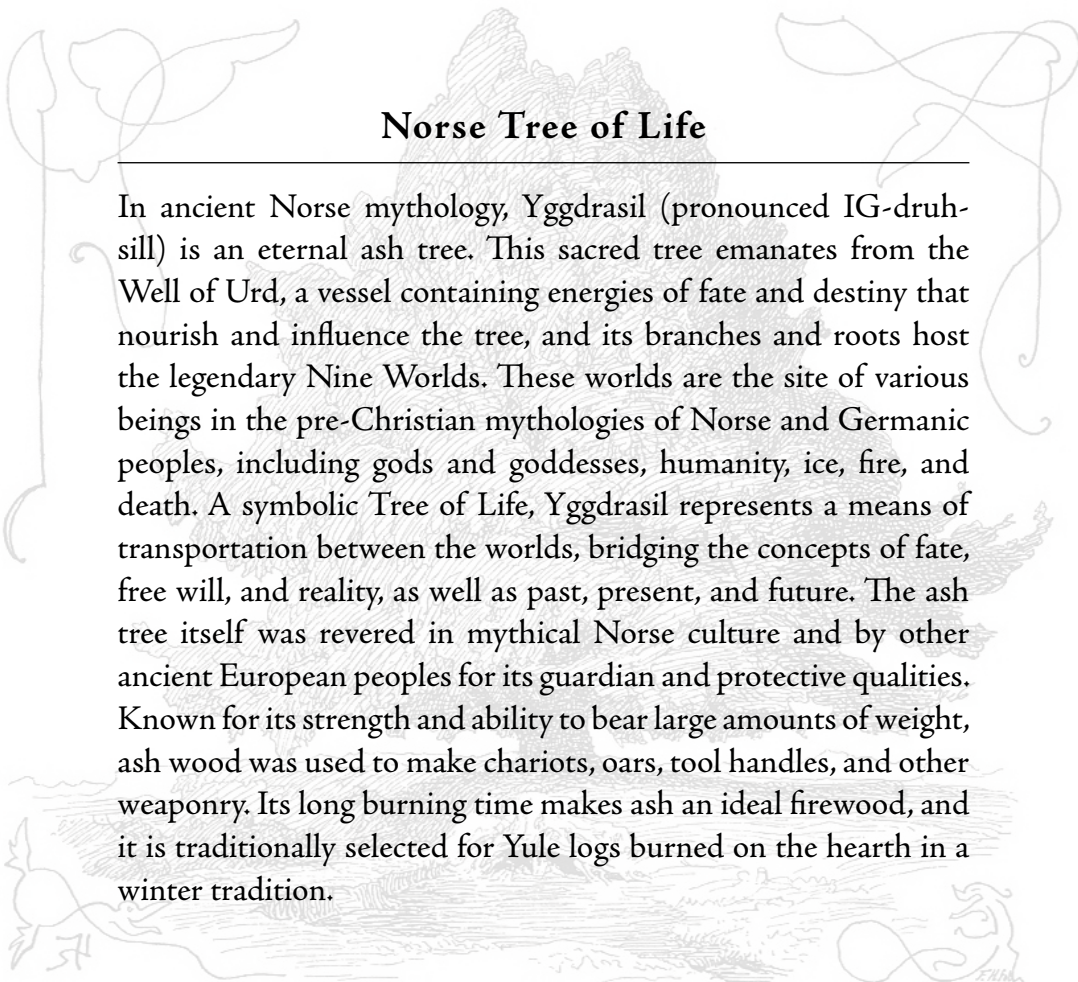




Moon Trees

In 1971, the Apollo 14 mission left Earth to journey to the moon. On board with astronauts Alan Shepard, Edgar Mitchell, and Stuart Roosa—a former “smoke jumper” with the US Forest Service in Oregon—was a packet of hundreds of tree seeds. Partially paying tribute to his experience parachuting into woodlands, Roosa worked with forest scientists to bring the seeds to space to see if they would grow normally when planted back on Earth. The seeds—and Roosa—orbited the moon thirty-four times. When the mission returned to Earth, the seeds were separated by species—redwood, loblolly pine, sycamore, Douglas fir, and sweetgum—and shipped to forest service labs in Mississippi and California. Nearly all the seeds germinated, and saplings were shared around the world, from the White House to Brasilia, Brazil, and even a Girl Scout campsite in Cannelton, Indiana. Outliving two of the astronauts who brought them on their journey to outer space, the moon trees serve as a living memorial to humanity’s spirit of adventure—and our determination to explore the final frontier.

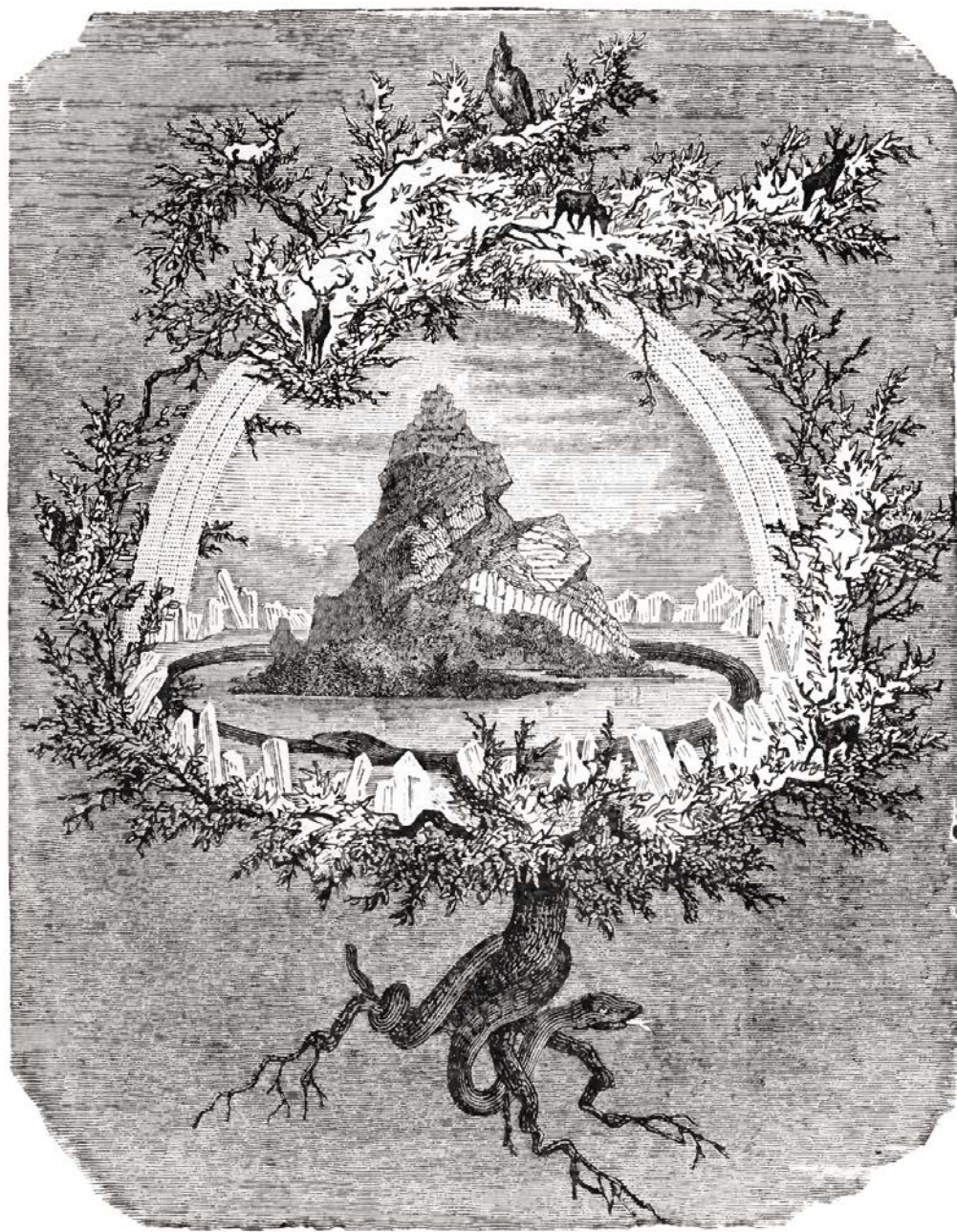
Deep sky astrophoto, furnished by NASA



Norse Tree of Life

In ancient Norse mythology, Yggdrasil (pronounced IG-druh-sill) is an eternal ash tree. This sacred tree emanates from the Well of Urd, a vessel containing energies of fate and destiny that nourish and influence the tree, and its branches and roots host the legendary Nine Worlds. These worlds are the site of various beings in the pre-Christian mythologies of Norse and Germanic peoples, including gods and goddesses, humanity, ice, fire, and death. A symbolic Tree of Life, Yggdrasil represents a means of transportation between the worlds, bridging the concepts of fate, free will, and reality, as well as past, present, and future. The ash tree itself was revered in mythical Norse culture and by other ancient European peoples for its guardian and protective qualities. Known for its strength and ability to bear large amounts of weight, ash wood was used to make chariots, oars, tool handles, and other weaponry. Its long burning time makes ash an ideal firewood, and it is traditionally selected for Yule logs burned on the hearth in a winter tradition.

The Ash Yggdrasil by Friedrich Wilhelm Heine, 1886



The Yolka New Year Tree

Just as the winter season gets underway in Russia, billowing evergreen trees decorated with baubles, lights, and sparkling trinkets are brought into homes and stores and adorn public places. Many of these trees are topped with a star. But as familiar as this traditional symbol of the Christmas holidays may look, the tree in this case is called a *yolka* or New Year tree. The practice of decorating Christmas trees most likely emanated from pagan traditions honoring the evergreen nature of fir and pine trees on the darkest day of the year, the winter solstice. The Russians decorated trees just like their Western counterparts until the 1917 Russian Revolution. At that time, the Christmas tree began to be seen as a symbol of the bourgeois, as well as a representation of religion, which was banned by state-sponsored atheism. In this environment, New Year's day became the official celebration of the season, and the steadfast tree made a comeback a few years later when high-ranking Bolshevik officials argued that the tree was an appropriate symbol of festivity for all Russians during the winter season. Thus, the New Year *yolka* emerged as a centerpiece for celebration, a reminder of the promise of life and renewal out of dark days, and a secular emblem of joy during cold winter months.

Manege Square, Moscow, Russia









The Ancient Arboretum of Bussaco Forest

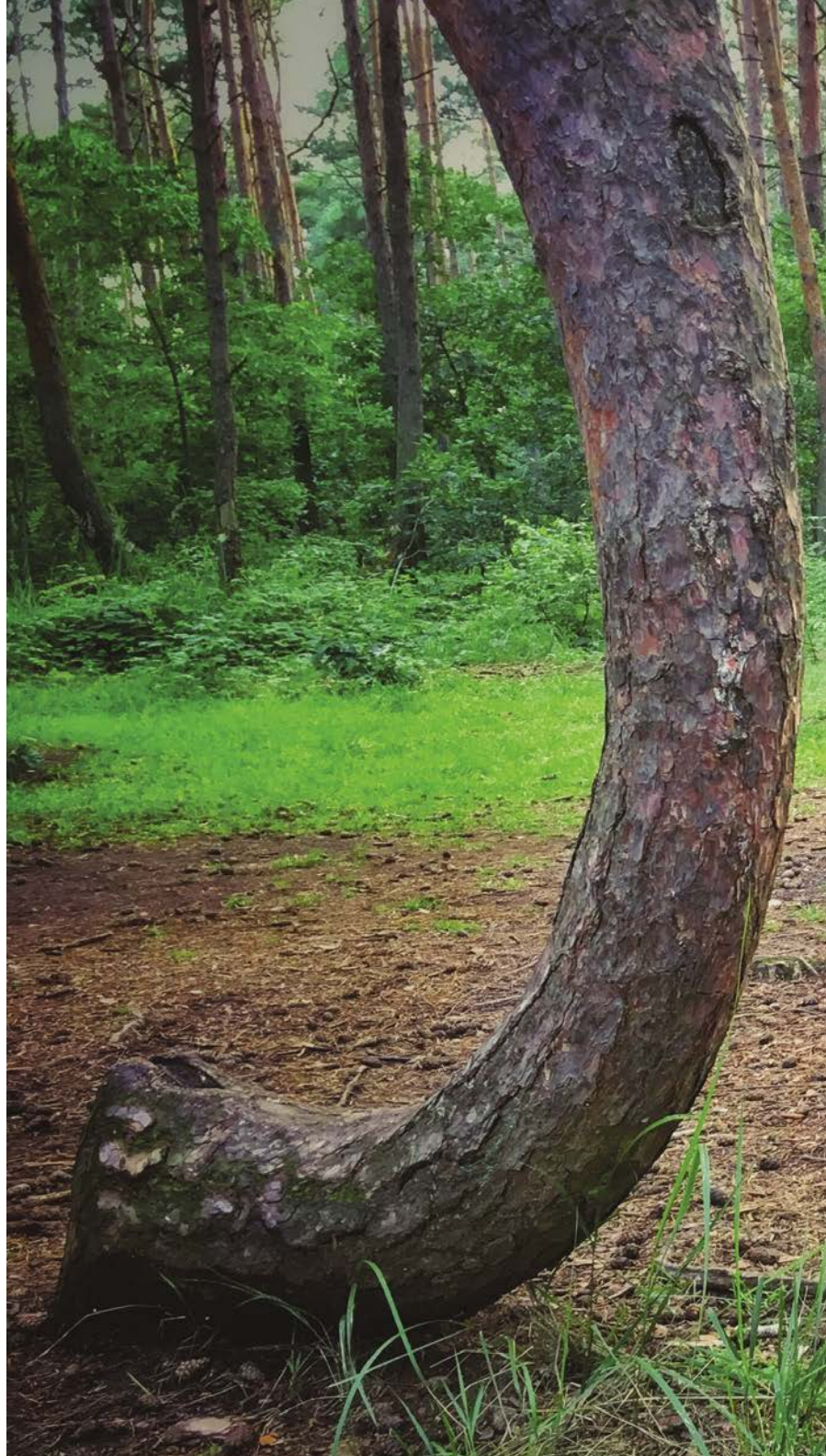
On the northwestern tip of Portugal's Centro region lies an ancient arboretum hidden behind stone walls punctuated by eleven entrance gates. The ancient arboretum known as the Bussaco Forest is home to some four hundred native species including the Mexican cypress, Tasmanian mountain ash, olive trees, bunya pine, ginkgo, and sequoia. First settled by Benedictine monks in the sixth century, the forest was eventually governed by the Order of Discalced Carmelites. The Carmelite monks constructed the walls and built a convent and small chapels in the forest during their oversight of the land. During the 1600s, papal decrees prohibited women from entering the forest and declared that anyone caught harming the trees would be excommunicated. The proclamations are engraved in stone tablets on the outer wall of the forest's first gate, *Portas de Coimbra*. When the monasteries were dissolved at the end of the nineteenth century, much of the remaining convent was razed to make way for an extravagant palace for the Portuguese royal family. Today the palace serves as a luxury hotel, and the ancient Bussaco Forest is a destination for tourists seeking leisurely strolls, hikes, and botanical immersion in a uniquely historic place.

Bussaco Forest, Serra do Buçaco, Portugal

The Crooked Forest of Gryfino

Just outside the town of Gryfino, Poland, the group of four hundred pine trees that make up Krzywy Las, or the Crooked Forest, all have trunks that make a sharp 90-degree angle before rising up again. Even more mysterious is that all of the bent trees face north and are surrounded by a forest of other pine trees that lack unusual shapes and grow in a traditional vertical fashion. Multiple theories abound about how the trees, believed to have been planted in the 1930s, got their trademark angled trunks. Some posit that heavy snow bent the trees over before a lingering spring melt allowed them to grow upright again. Others offer that tanks invading Poland in World War II may have flattened the trees before they were able to resume a normal growth pattern toward the sky. Still others suspect the bends are man-made, shaped to create pieces of wood that would be ideal for use in shipbuilding or furniture making. However, the fact that trees within only this specific patch of forest have adopted this trademark “J” shape contributes further to the mystery of the Crooked Forest.

Crooked Forest, Gryfino, Poland









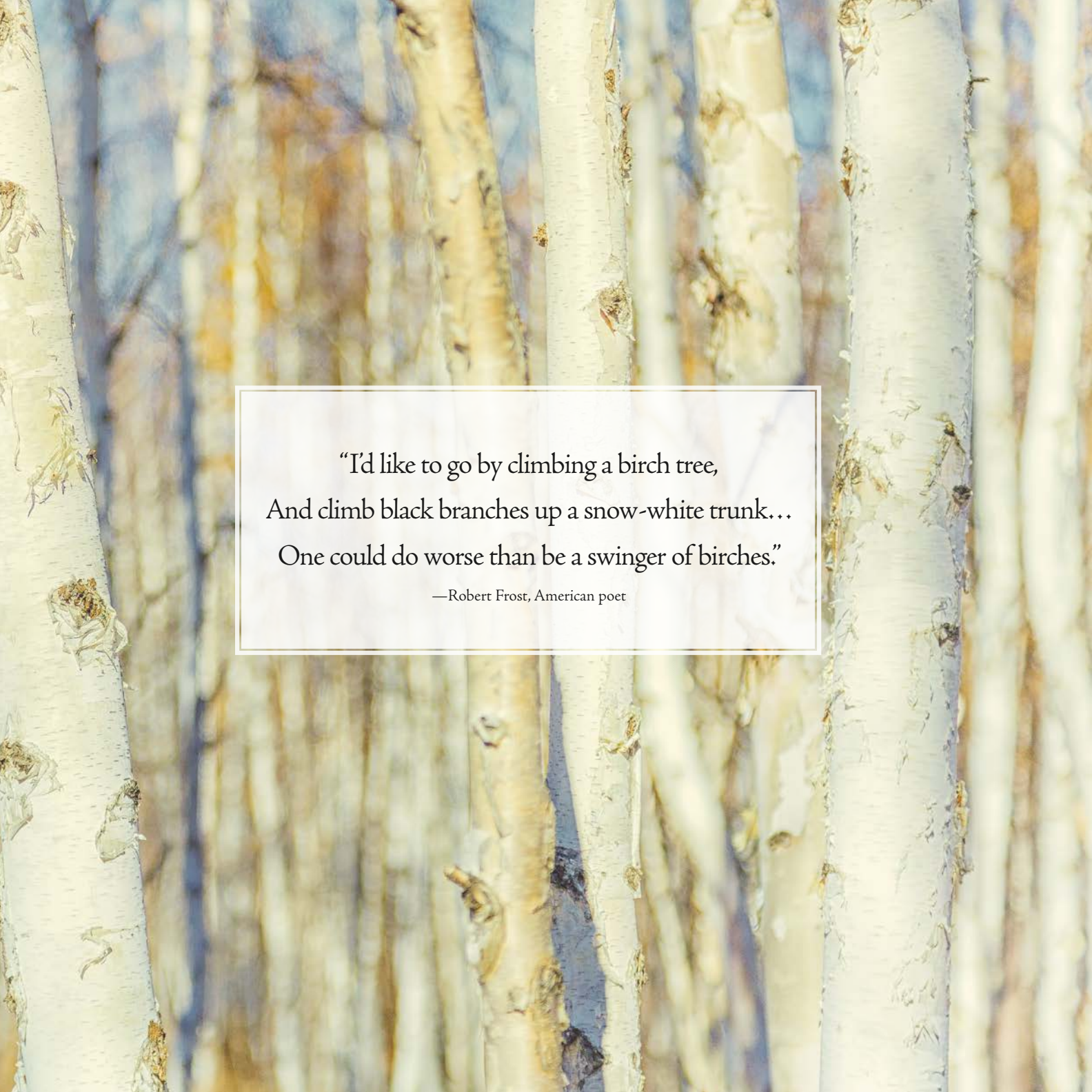
A Tree Heartbeat

Just as the human chest rises and falls with each breath, scientists have discovered that tree branches move up and down—albeit slowly and by just a few inches—in what they believe is a sort of “tree heartbeat.” Not unlike the way our own hearts pump blood throughout our veins through the vascular system, the tree heartbeat is believed to involve rhythmic expansion and contraction as a mechanism for moving water, a tree’s lifeblood, and nutrients through the plant’s xylem and phloem network.

Wisdom of the Birch

With its striking narrow trunk, papery white bark, and thin serrated leaves that delicately flicker in the breeze, the birch tree is revered around the world and is considered a symbol of new beginnings, strength and endurance, and purity. Its unique appearance made it an ideal tree to use during seasonal celebrations among early pre-Christian people. The tree's pale bark was often used in pagan celebrations of Imbolc, when the first signs of spring began to emerge from the wintry depths, to symbolize the return of light and the promise of renewal. Later in the season, at the Beltane celebration of fertility and spring's fullness, birch trees were traditionally used as a May pole, decorated and danced around, and later cut down and burned in a celebratory Beltane fire. Six months later the birch was again used in the pagan celebration of Samhain, to beat out malevolent spirits from the hearth and purify spaces for ritual and renewal. The birch tree was also used throughout the ages for practical purposes: its bark, sap, and wood were used for furniture, soap and oil, glue, and purifying fragrances. Birch bark canoes were frequently created and used by Native Americans, who also found the tree's supple wood an adaptable and hardy substance with which to create shelters and housewares. The sap has also been turned into syrup and the tree's buds used for medicinal purposes.





“I’d like to go by climbing a birch tree,
And climb black branches up a snow-white trunk...
One could do worse than be a swinger of birches.”

—Robert Frost, American poet



The Trembling Aspens of Pando

The phrase *largest living organism on earth* might evoke images of a giant blue whale or mammoth fungal network. In actuality, a grove of quaking aspen trees in Utah has claimed that title for years, thanks to an amazing shared root system and method of reproduction. Known as Pando, translated from Latin for “I spread,” nearly forty-seven thousand aspen dot more than one hundred acres of land in Utah’s Fishlake National Forest. The trees are considered one single organism—a clone—as they are genetically identical, thanks to DNA analysis performed in 2008. The aspen reproduce by sprouting new stems directly from their giant shared root system. Recently under siege from grazing deer and elk that were eating the new growth stems, the organism is now under the protection of fences and the care of rangers. With an age estimated between eighty thousand and one million years old, Pando is a unique natural wonder. Aspen trees themselves have long held a place of otherworldly symbolism in ancient cultures. Their fluttering heart-shaped leaves have delicate serrated edges and burnish yellow-gold with hints of orange during the fall, creating a vibrant blaze against a backdrop of pines along a mountainside. Their white bark covers a photosynthetic layer that continues to grow throughout the winter, providing a source of nourishment for various woodland animal species. The Celts believed the trees were a means of communicating with the spirit world, thanks to their quivering leaves. They used the wood of the tree to create shields, believing it possessed a protective quality. Ancient Greeks also revered the tree and believed it represented a link between worlds, often burying the dead with crowns of aspen leaves.

*“And all the lives we ever lived and all the lives
to be are full of trees and changing leaves.”*

—Virginia Woolf, English writer





Stately Magnolia

An iconic representation of the southeastern United States, the southern magnolia tree with its waxy, oblong, dark green leaves and orb-shaped blooming flowers is the epitome of trees in the American South. Other varieties, like the Saucer Magnolia, a hybrid cousin of the southern magnolia, exhibit saucer-shaped pink and white flowers that bloom each spring against gray bark and large, leathery, green leaves. No matter the variety, the magnolia is also a tree with prehistoric roots; fossils indicate the magnolia tree dates back twenty million years.

The Quiver Tree Forest of Namibia

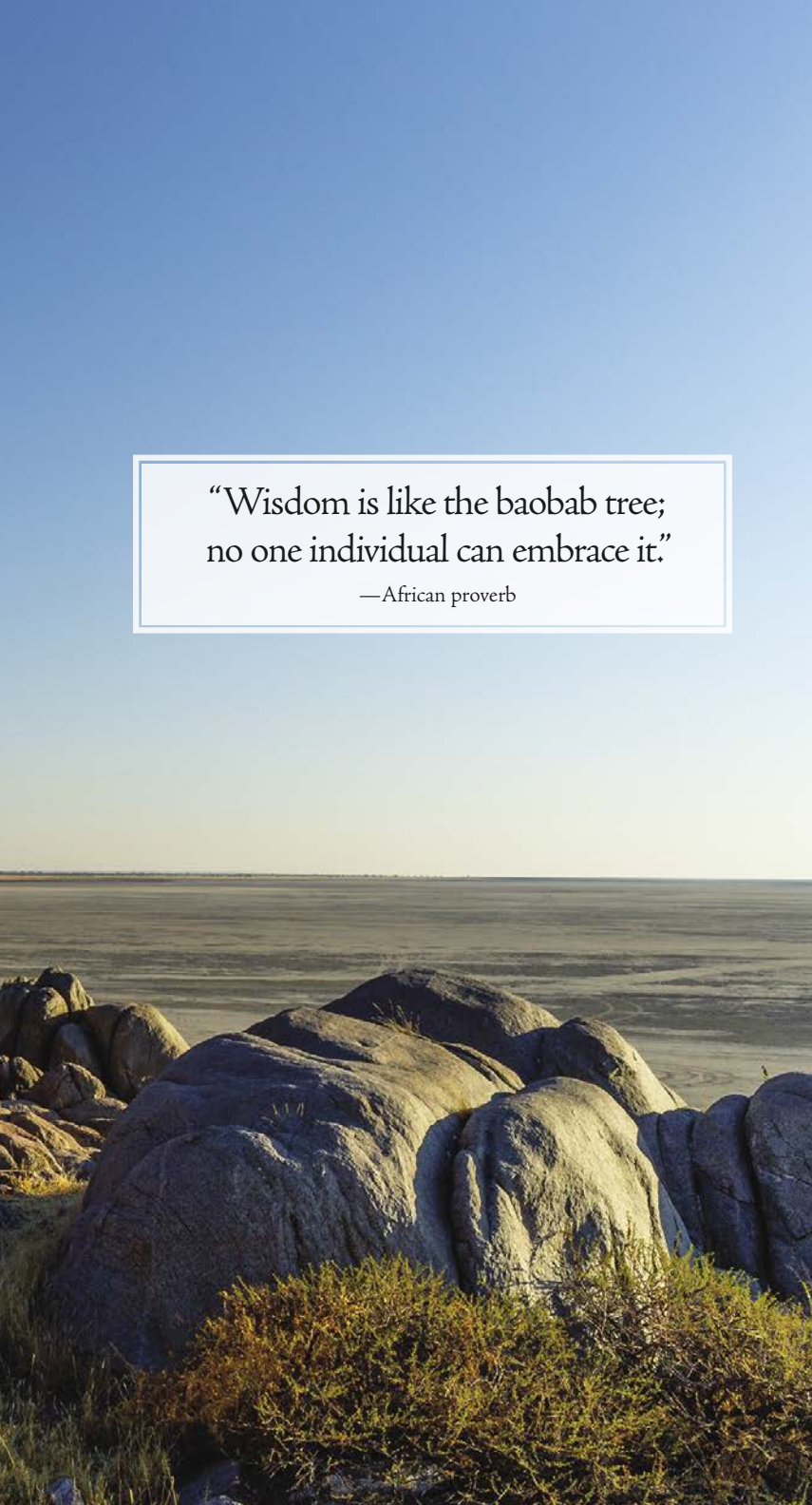
Sprouting from the arid land as if they were planted upside down, roots jutting out toward the sky, 250 unusual-looking trees reach skyward on a farm near the Namibian town of Keetmanshoop. This forest of trees is actually a spontaneously occurring grove of *Aloidendron dichotomum* (formerly *Aloe dichotoma*) plants, some nearly two to three centuries old. Dubbed “quiver” trees for the way native peoples in the region used their branches to create containers for holding arrows, the plants are one of the few species of aloe that grow sky-high. Protected as a national landmark, the quiver trees possess scaly bark along their trunks that becomes smooth as it reaches the branches, which are covered in a white powder that reflects the sun. The plants bloom vibrant yellow flowers during Namibia’s winter season, attracting diverse insects and wildlife to the trees. Considered holy trees, indigenous people also used the fibrous, hollowed-out trunks for storing food and water.

Kalahari Desert, Namibia









“Wisdom is like the baobab tree;
no one individual can embrace it.”

—African proverb

The Iconic Baobab

Recognized as Africa’s most iconic tree, the baobab is found in more than thirty African countries and is known as the continent’s Tree of Life. With its trademark stout trunk and root-like branches sprouting toward the sky, the world’s oldest living flowering plant thrives in dry, arid climates and can live for thousands of years. A prehistoric succulent, it absorbs large amounts of water in its thick stem and sprouts an oblong, velvety green fruit. The sweet baobab fruit tastes like a healthy sherbet and is filled with a powdery white interior that is taking off as the latest health-food supplement for people around the world. Indigenous Africans have long valued the fruit for its health benefits and have revered the tree for its many uses. Its branches have provided shelter; its bark has been used to create products including ropes, mats, baskets, paper, and cloth; and its leaves and fruits have been harvested for food and drink. Many native cultures have weaved the tree into their legends and lore thanks to its hardiness, resilience, and resource-rich nature, and they use it as a source of blessing and superstition in ritual ceremonies. The tree regenerates when its bark is stripped, and numerous wildlife avail themselves of the tree’s resources. All species of the baobab produce aromatic flowers that bloom at night and fall within twenty-four hours, a spectacle that takes planning to witness.

Namib Desert, southern Africa





The Kigelia Sausage Tree

Scattered throughout Sub-Saharan Africa is the *Kigelia*, or “sausage tree,” a tree known for its dangling fruits that, when ripe, resemble large sausages. The tree produces large flowers that unfold at night in shades of crimson and maroon. Emitting a scent deemed unpleasant by humans, the flowers attract a species of dwarf fruit bats that pollinate the blooms. As the nectar-rich blossoms drop, other animals such as baboons and brush pigs feed on the flowers. Emerging from the flowers on dangling vines are greyish, sausage-like fruits that can grow to be longer than a foot and weigh more than ten pounds. While the fruits themselves are not edible, the skins can be harvested and ground into a paste that is used both as a skin ointment and to ferment beer. When dried, the fruit pods are used as ornamental jewelry, and when boiled they produce a red dye. And for thousands of years, the trunk of the *Kigelia* tree has been used to create a dugout canoe known as a *mokoro* to transport native peoples on the Okavango River in Botswana.

Serengeti, Tanzania





The Primeval Białowieża Forest

In an eastern corner of Poland, on the border with Belarus, lies one of Europe's last primeval forests. Known as Białowieża Forest, this old-growth forest is home to a diverse array of fungi and a rich variety of wildlife species, including the largest herd of free-roaming European bison. A UNESCO World Heritage site, the forest has retained the essence of its original state and is a living microcosm of diverse plant, animal, insect, and microorganism life that exist in harmony with one another. Home to centuries-old oak, elm, and lime trees, as well as a wide variety of birds including nine species of woodpeckers, rare breeds of owls, wolves, elk, lynx, beavers, and more, visiting Białowieża is like entering another world where one is immune to the latest news headlines or cares of humankind. Forests like Białowieża blanketed northeastern Europe until around the fourteenth century, when development slowly began to encroach. Fortunately, the Białowieża Forest was granted official protection in the late 1940s. Even so, its unique biodiversity has come under threat again, as Polish officials have opened the forest for logging in an attempt to mitigate damage done by an infestation of bark beetle.

Great spotted woodpecker, Białowieża Forest, Poland

Virgin Komi Forests

Stretching almost 20,000 miles along the tundra of Russia's Ural Mountains is one of Europe's most extensive areas of virgin boreal forest remaining today. A subarctic snow forest full of mostly coniferous trees, the Virgin Komi Forests are a UNESCO World Heritage site, and are home to more than forty mammal species including reindeer, sable, and mink; more than two hundred species of birds; and sixteen species of fish. The Virgin Komi Forests characterize the landscape of Russia's taiga, a subarctic forested region between the tundra and grassy steppe of Siberia, and is rich in a variety of pine and coniferous trees including the Siberian spruce, Siberian cedar, and Russian larch.

*"A tree is beautiful, but what's more,
it has a right to life; like water, the
sun and the stars, it is essential. Life
on earth is inconceivable without
trees."*

—Anton Chekhov,
Russian playwright and writer

Shchugor River, Virgin Komi Forest, Russia





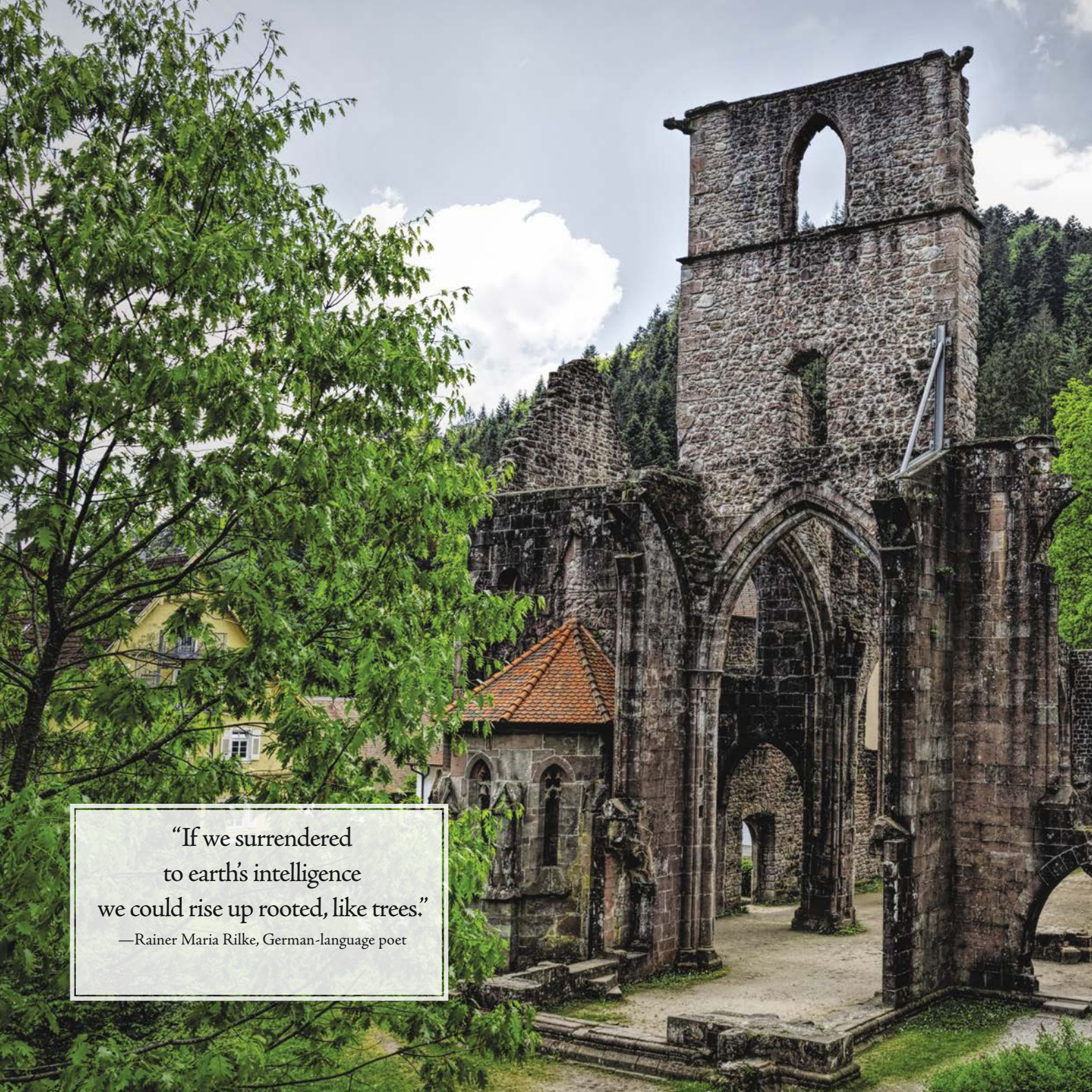
A Subterranean Communication System

Deep in the woods, in the quiet of the forest, birds call to one another; mother bears keep their young in check through growls, nudges, and silent glances; and salmon use a primordial form of communication as they follow the paths of their ancestors upstream. Like the animals that live under their branches, research conducted by Canadian forest ecologist Suzanne Simard reveals that trees in the forest are also speaking to one another, making use of a mycelial network of subterranean fungi to communicate. Simard's research found that trees favor their own seedlings, sending them more carbon through this underground fungal network, and even adjust their root structure to make room for younger related trees to establish themselves and thrive. Her research also revealed that dying "mother" trees send carbon messages via this subterrestrial web to offspring that later increase the seedlings' defense mechanisms to various stressors. This evidence supports a strong relationship among naturally growing forest flora and is buffered by observations made by German forest ranger and author Peter Wohlleben. After more than thirty years managing three thousand acres of woods near Cologne, Germany, Wohlleben noticed that human reforestation efforts utilizing insecticides, machinery, and artificial spacing of trees during planting resulted in trees that lost parts of their natural connection and that became less resilient. Allowing the woods to reclaim their wild, primal growth habits enabled the trees to establish these inherent communication networks and habits that foster robust growth and development.

*"We humans look rather different from a tree.
Without a doubt we perceive the world differently than a tree
does. But down deep, at the molecular heart of life,
the trees and we are essentially identical."*

—Carl Sagan, American astronomer





"If we surrendered
to earth's intelligence
we could rise up rooted, like trees."

—Rainer Maria Rilke, German-language poet



Germany's Black Forest

Stretching for almost 100 miles along Germany's southwestern border is a dense evergreen forest with fir trees that grow in such close proximity that only the thinnest slices of sunlight reach the forest floor. Known as the Black Forest for this reason, these famous German woods have served as the inspiration for the Grimm brothers' fairy tale legends such as "Hansel and Gretel," "Little Red Riding Hood," and "Rapunzel." The murky, opaque environment of the woods makes it the ideal location for the imagination to conjure magical creatures and enchanted environs for all manner of fairies, trolls, gnomes, and witches. Ancient Romans who traveled through the region valued the forest for its natural hot springs located in the northwestern corner of the woods that became a popular destination for communal bathing and thermal soaks. The forest is also home to the Allerheiligen monastery as well as traditional German farmhouses and castles that crop up among the region's valleys. In addition to being a source of lumber for ships and construction, Black Forest trees were used to produce cuckoo clocks by farmers who needed to bolster their income during the cold winter months. Known for their intricate design and traditional craftsmanship, Black Forest cuckoo clocks have been in production since the mid-eighteenth century. Black Forest ham and cake also hail from the arboreal enclave.

All Saints Allerheiligen monastery, Black Forest, Germany

A Summer Snow of the Cottonwood

On a balmy, late spring evening, a feathery white spore floats to the ground from among the treetops. Soon the air fills with fluffy, cloud-like seedlings. Falling like snowflakes, these downy seedpods are being released by the cottonwood tree in what appears to be a summer snowstorm. Native to forests across the United States, the cottonwood was a tree beloved by the country's early pioneer settlers, who relished in the shade under its lustrous branches and found a source of food for livestock in the tree's leaves. Including species such as the quaking aspen and Plains cottonwood, the tree was a source of lumber for Native Americans who fashioned dugout canoes from the trunk and used the bark as food for horses and as a base for medicinal tea. In late spring, female cottonwood trees develop red blooms that produce the namesake cotton spores. And as summer fades into fall, so do the cottonwood's voluminous leaves, changing from a bright green to a vibrant yellow.

Cottonwood tree seeds, Denver, Colorado, US





“Even the tallest trees are able to grow from tiny seeds like these. Remember this, and try not to rush time.”

—Paulo Coelho, Brazilian lyricist and novelist





The Wonders of *Waldkindergärten*

Throughout the United States, Scandinavia, and Germany, mud puddles, streams, and outdoor experiential learning are taking the place of plastic toys and electronic stimulants. *Waldkindergärten*, or forest kindergartens, have been growing in popularity for the past few decades as parents and educators embrace a return to nature as a way to foster learning and growth in young children. Suiting young children up in waterproof coveralls and rubber boots and sending them out to explore for several hours at a time, even in poor weather, is one way that educators address a decline in human interaction with nature. Children in forest kindergartens are encouraged to feel, climb, touch, splash, gather, create, and explore in the elements. This type of tactile, earth-based learning has been proven to foster creativity and problem-solving skills and to promote physical fitness, enhance eyesight, reduce stress levels, and raise levels of vitamin D, which are just some of the benefits of spending more time in the forest.

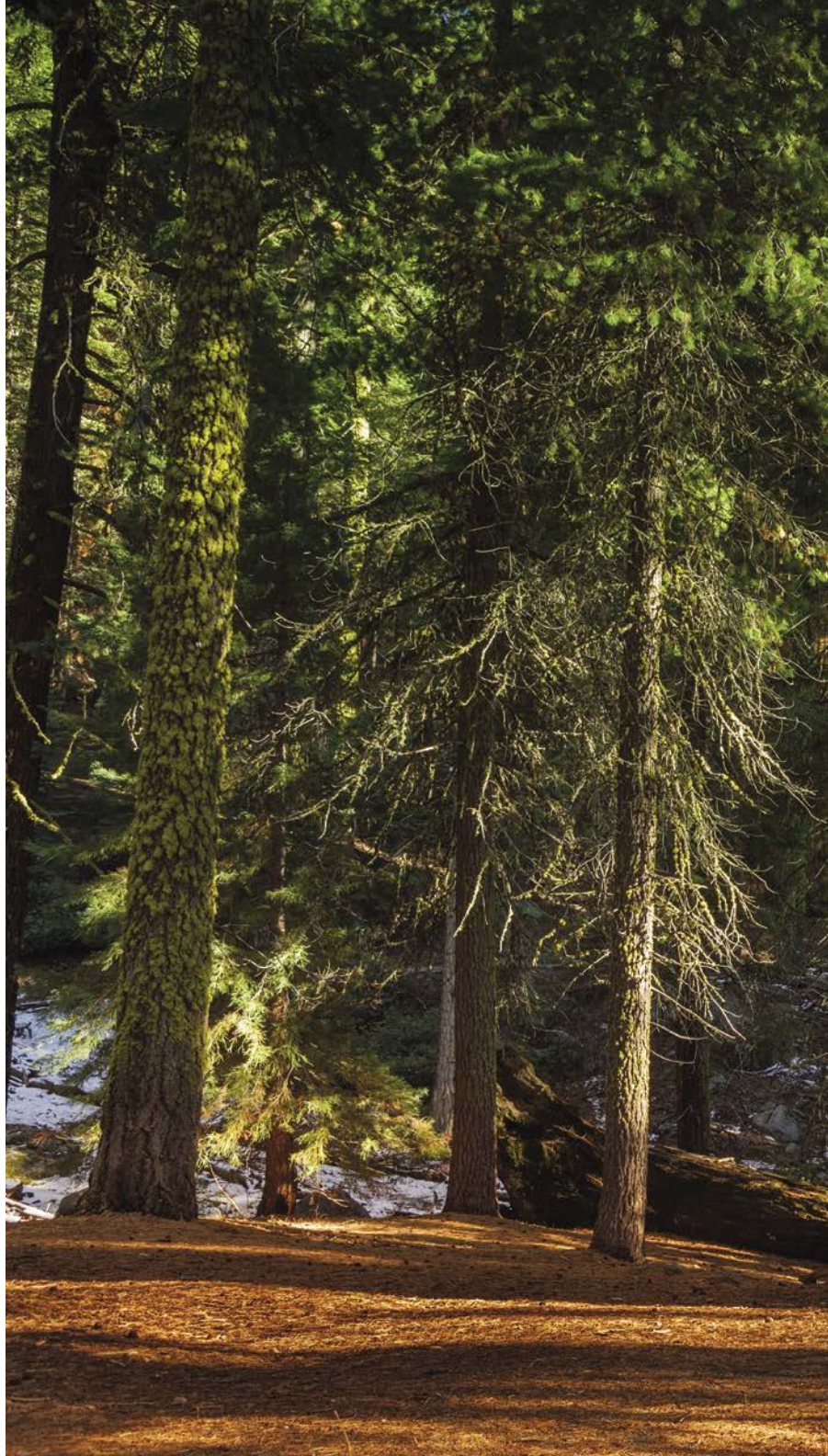
*“Forget not that the earth delights
to feel your bare feet and the winds
long to play with your hair.”*

—Khalil Gibran,
Lebanese-American author, poet, and artist

A Hidden Giant—Hyperion

In 2006, California's Redwood National Park lifted its veil and revealed the face of the world's tallest tree. Hikers Chris Atkins and Michael Taylor were making their way through the woods when they came across a grove of giant trees. This towering stand of trees is presided over by a mammoth tree known as Hyperion, which towers over the others at an incomparable 379 feet, 4 inches—twice as tall as the Statue of Liberty and with a mass equal to 15 blue whales, the largest mammal on earth. Park rangers keep the exact location of Hyperion a secret so as not to disturb the fragile redwood forest ecosystem and preserve the nature of the estimated six-hundred-year-old giant.

General Grant Tree Trail, California, US









The Aquatic Arbor of Mangrove Trees

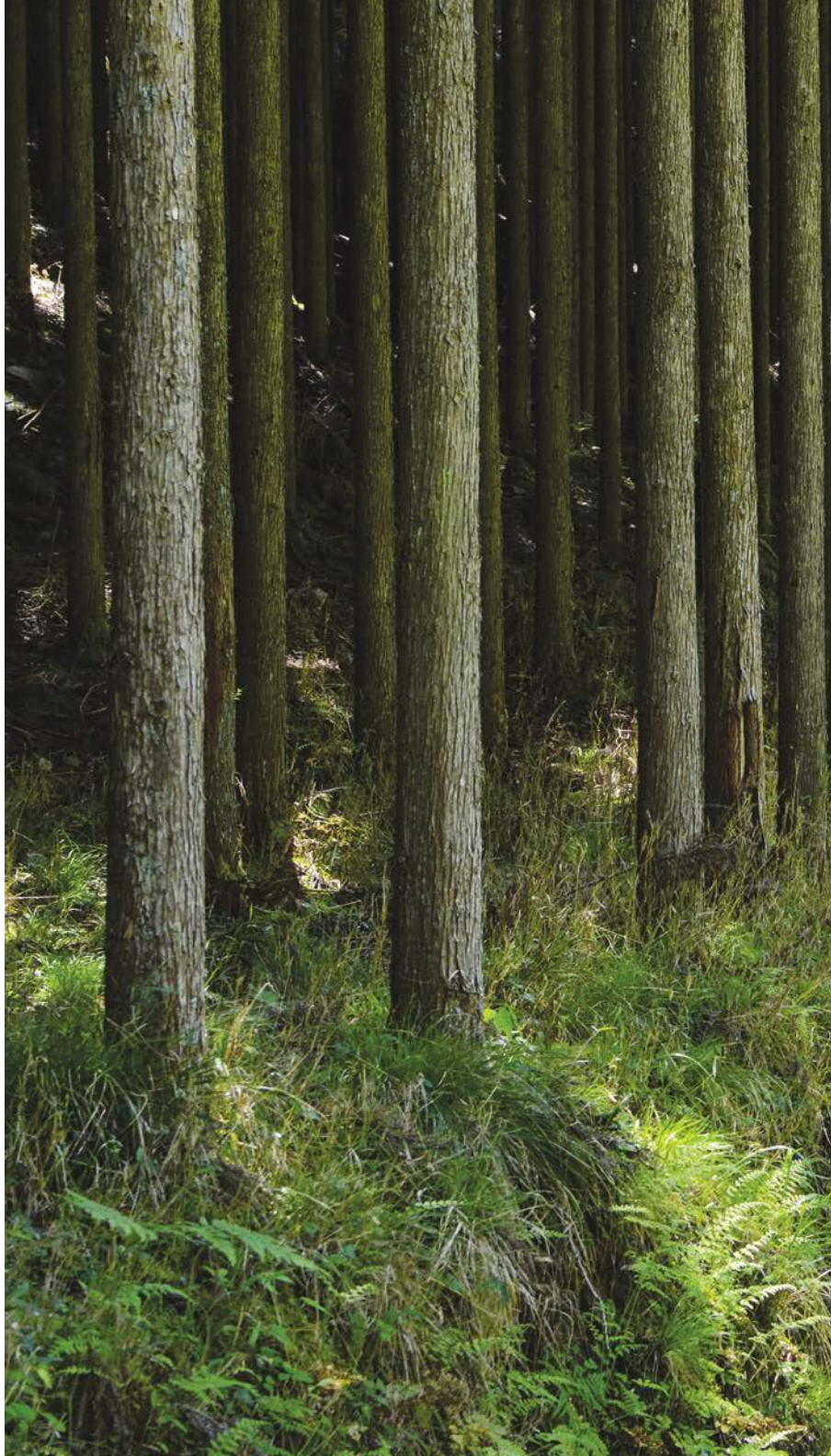
Perched on stilt-like roots, rising above salty water that floods the tree twice daily at high tide, the mangrove is a tropical tree with unique adaptations to survive in harsh ocean environments. Its root system acts like buttresses, supporting the tree as it ascends above salt water and stabilizing the mangrove in loose silt and sand. Its bark and roots are covered with lenticels, cell-shaped breathing pores that close when the tide is high but open to allow oxygen to reach the tree when waters are low. With around eighty species, many mangrove seeds germinate while still attached to the tree. Known as propagules, the seedlings detach and fall to the water below, some floating along for up to a year before turning upright and anchoring their roots into tidal mudflats. Within a decade, a single mangrove seed can give rise to an entire grove of trees that supports an incredibly diverse coastal ecosystem. From root to crown, mangrove trees serve as a shelter for spawning fish, crabs, and shellfish and as a source of food for birds, insects, reptiles, and mammals who nest and feed from the leaves and branches. Falling leaves become a vital source of nutrients for algae and other microscopic sea organisms below the trees, which in turn fertilize the soil and sediment that support the mangrove roots. Mangrove thickets also protect shorelines from the impact of wind and storms, and they protect the sea and nearby reefs from sediment and pollutant runoff.

Caribbean Sea, Panama, Central America

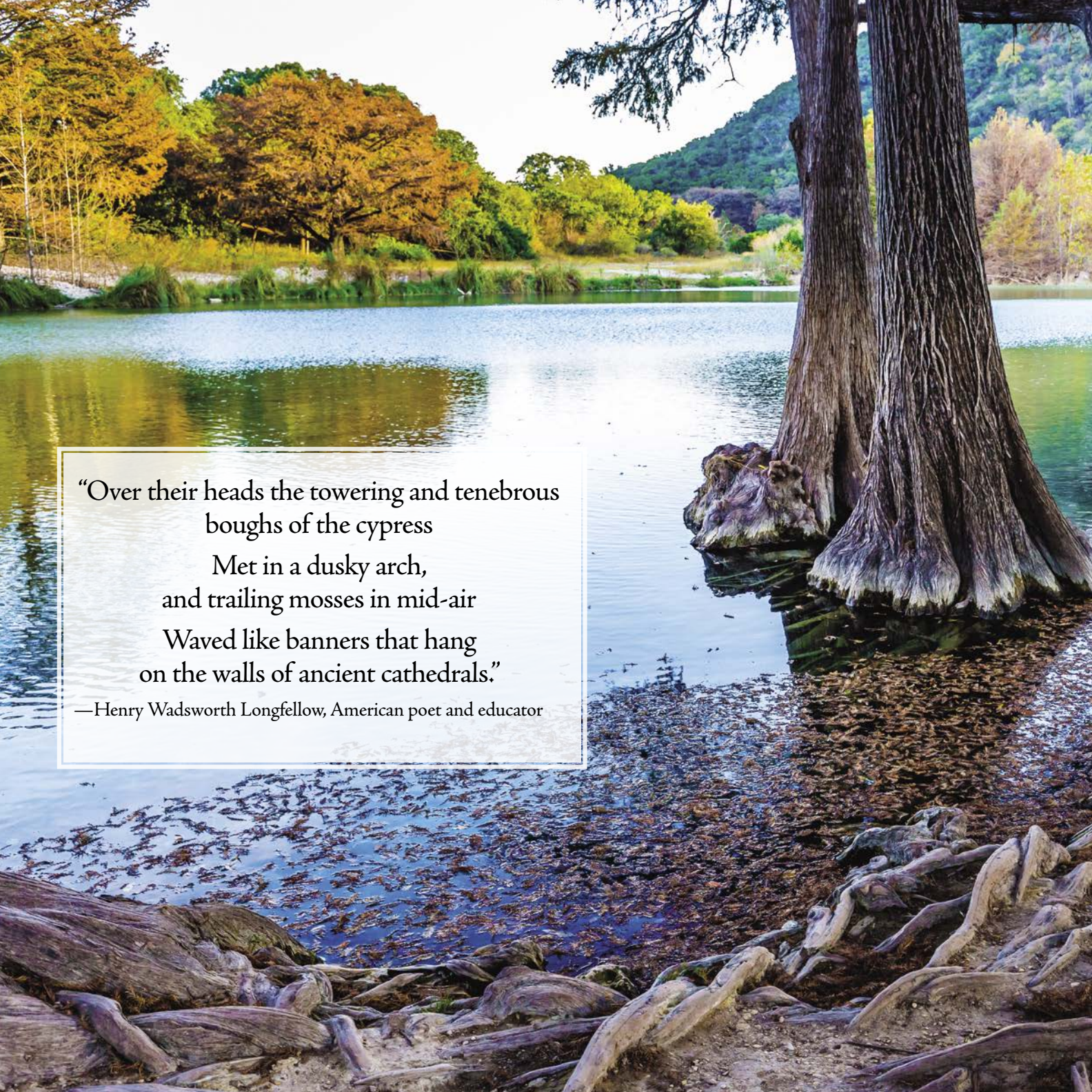
The Sacred Sugi Pines

Native to Japan and recognized as the country's national tree, *Cryptomeria*, or the Japanese sugi pine, is a tall, tapering conifer. The name *cryptomeria* derives from the Greek language meaning "hidden parts" in reference to the way in which the tree's seeds are well covered by a pinecone shell. The reddish-brown, scented bark of the tree peels off in strips, and the wood is frequently used in house building throughout the Far East. *Cryptomeria* are also traditionally planted near Japanese holy sites and shrines, with many trees living for centuries. A 40-mile-long avenue of sugi trees was planted in the 1600s to mark the death of shogun Tokugawa Ieyasu and still exists today. A *Cryptomeria* specimen known as Jōmon Sugi is hailed as Japan's oldest living tree. Estimates on the tree's age range from 2,200 to 7,200 years old. Those who want to pay homage to Jōmon Sugi, which is located in Yakushima, must endure an arduous day-long hike through thick, mossy forest and past abandoned railroad tracks. On the way to visit Jōmon Sugi, hikers also pass by a monument known as Wilson Stump, a *Cryptomeria* relic felled at least four hundred years ago. The open trunk frames the sky in a heart shape—a treat for visitors ambitious enough to peer out from inside.

Kiyotaki to Takao trail, Kyoto, Japan







“Over their heads the towering and tenebrous
boughs of the cypress
Met in a dusky arch,
and trailing mosses in mid-air
Waved like banners that hang
on the walls of ancient cathedrals.”

—Henry Wadsworth Longfellow, American poet and educator



Bald Cypress, Keeper of the Swamp

Making its home in the swampy areas of the southeastern United States, the bald cypress is one of the few trees that thrives in humid, moist regions. A deciduous conifer that loses its needle-like leaves each winter and regrows them in the spring, the tree is most well-known for its upward-growing root appendages that emerge like “knees” from the surrounding water. Technically known as *pneumatophores*, these knees are thought to anchor and help facilitate oxygenation for the tree, which otherwise buries its roots in thick silt and loamy soils. The slow-growing trees can live as long as six hundred years, and they spread their seeds via round, knobby cones that begin as pliant green spheres before hardening and turning a crispy brown. Like the mangrove tree, the bald cypress tree plays a vital role in maintaining equilibrium in its ecosystem. Its roots and trunk help mitigate soil erosion and serve as a barricade against pollutants entering swamplands, and the tree also serves as a source of shelter and nutrition for the reptiles, mammals, and birds that rely on the bald cypress to sustain the vibrant wetland in which they make their home.

Frio River, Garner State Park, Texas, US

The Craggy Pine, Europe's Oldest Tree

Atop a rugged cliff in Italy's Pollino National Park sits what scientists believe to be Europe's oldest living tree. A Heldreich's pine, the tree has survived for 1,230 years through all manner of environmental changes. After discovering that the central portion of the tree's trunk containing its earliest rings had turned to dust, scientists used a combination of tree-ring analysis and radiocarbon dating on exposed sections of the tree's roots to determine its age. While the tree's crown has all but vanished, its sturdy trunk remains firmly planted to the ground and, based on wider outer growth rings, even seems to be growing. This leads scientists to believe that European efforts to mitigate climate change may have led to favorable environmental conditions for the tree, allowing it to persist for centuries after its germination in medieval times. Native to Europe, the Heldreich's pine, or Bosnian pine, is most often found on the Balkan Peninsula and favors steep, rocky mountainsides. Despite the craggy appearance of the oldest tree in Europe, most Heldreich's pines develop a full, conical shape with glossy, dark green needles and deeply grooved, greyish-brown bark.

Garden of Gods, Pollino National Park, Italy







The Tale of Old Tjikko

Roughly ten thousand years ago, as glaciers from the Ice Age began to recede and megafauna like mastodons and saber-toothed cats became extinct, a lone Norway spruce in Sweden's remote Fulufjället Mountain was just beginning to germinate. Discovered in 2004 by Swedish geography professor Leif Kullman, who named the tree after his dog, Old Tjikko, the tree stands around 13 feet tall and began its major growth period more than three thousand years before humanity learned how to write. After using radiocarbon to date the tree's roots, scientists were able to gauge the tree's age to be more than 9,500 years old. Old Tjikko has lost much of its luster and appears rather spindly because of its age, but it continues to hang on thanks to its ability to reproduce via its root structure. Commonly used as Christmas trees thanks to their pyramidal shape and dark green needles, the spruce got its start in Eurasia and Germany's Black Forest before making its way north to Scandinavia where it flourished.

Fulufjället Mountain, Norway

Methuselah and the Secret to Longevity

Firmly rooted to the earth in the midst of harsh and unforgiving conditions in California's White Mountains stands an ancient bristlecone pine named Methuselah. At more than 4,600 years old, Methuselah germinated even before the pyramids of Egypt were constructed. Bristlecone pines are known for their ability to live for thousands of years in brutally tough environments thanks to a few specific adaptations. Since there is little if any floral competition where they exist, the pines are able to make use of what natural resources are available. The trees go into a dormant stage during periods of intense drought, only to regenerate cell growth when favorable environmental conditions return. Because the pine's wood is very thick, it is protected from insects and bacteria that might otherwise introduce disease or rot. Unlike other ancient species of trees like sequoia, the small, rugged bristlecone pines maintain a relatively smaller stature thanks to slow growth rates due to harsh environmental conditions. Even bristlecone trees that appear to be dead can continue to survive by drawing sustenance from a single strip of living bark and are still able to produce viable seeds.

White Mountains, California, US









The Legend of the Angel Oak

A sprawling live oak on Johns Island near Charleston, South Carolina, known as the Angel Oak has a story to tell. Native to the lowlands of the coastal Carolinas, live oaks are recognized for their outstretched, oversized limbs that appear to offer a warm embrace, and this enormous tree stands more than 65 feet tall with a vast canopy of branches that open dramatically from the tree's trunk, extending a cover of shade over 17,000 square feet. Estimated to be around four hundred years old, the oak takes its name from previous landowners Justus and Martha W.T. Angel. Some of the Angel Oak's limbs even dive into the ground only to reemerge and grow skyward again. Local legend tells the story of ghosts of former slaves who appear as angels around the tree. According to one tale, the apparitions appear as fiery faces or images of part human, part animal. One local couple who were married under the tree returned under a full moon and reported witnessing glowing spirits around and in the branches of the tree.

*“Today’s mighty oak is just
yesterday’s nut that held its ground.”*

—David Icke,
English writer and public speaker

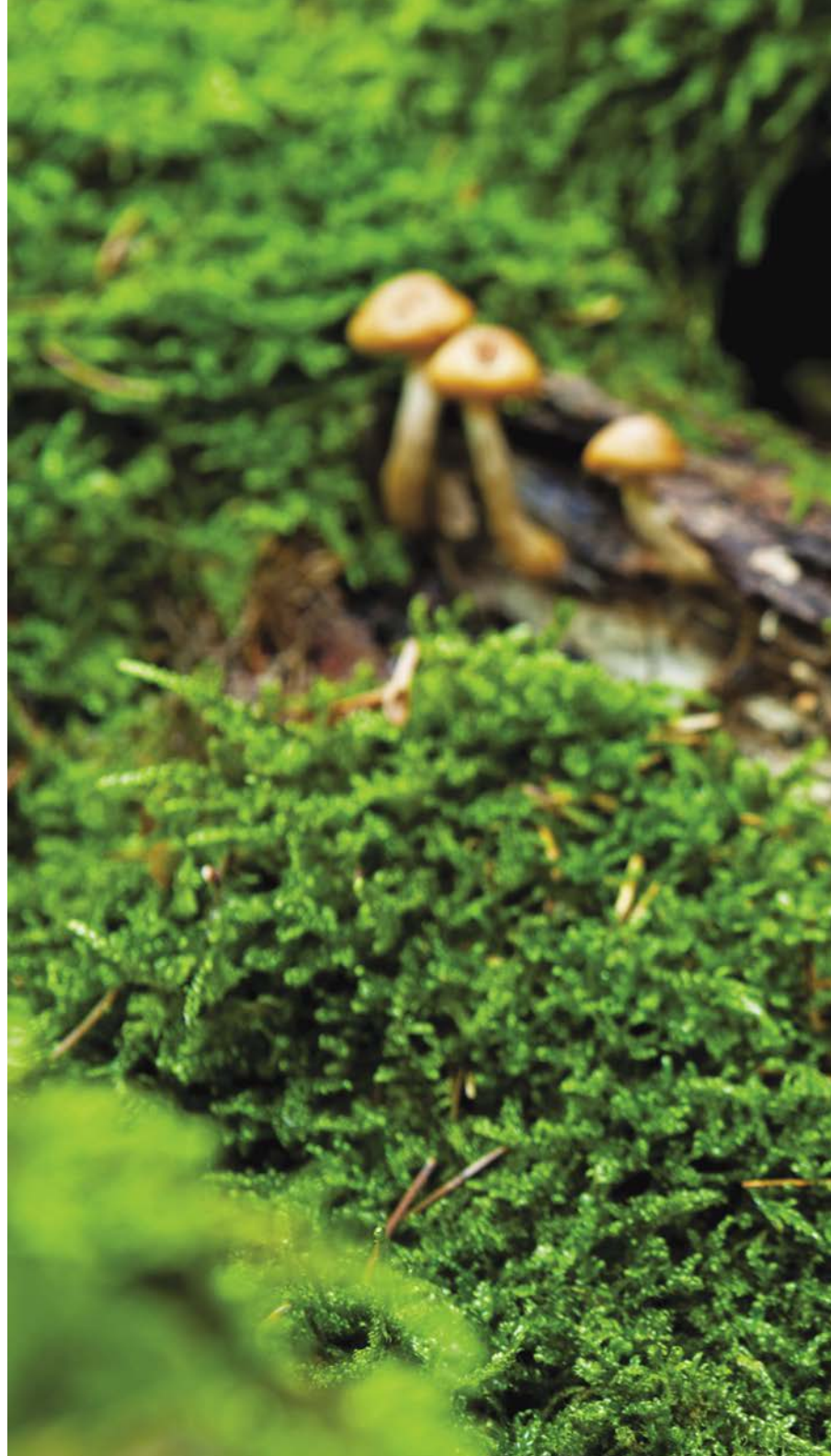
Johns Island, Charleston, South Carolina, US

The Life and Death of Trees

When a tree reaches the end of its life span or is felled by wind or rough storms, it remains a vital part of the forest ecosystem. In fact, dead wood is often more dynamic than the wood that is part of a living tree. Five percent of a living tree trunk may be composed of living cells, as opposed to 40 percent of dead wood, which fosters growing fungi and nitrogen-fixing bacteria. The usefulness of a tree doesn't end when its life does. From supporting mosses and lichens; to serving as a shelter for birds, bats, and other invertebrates; to acting as a barrier to mitigate soil erosion and flooding, dead wood is crucial to maintaining a healthy forest environment. Studies show that up to 40 percent of forest fauna depends on dead wood for survival, and as the wood decomposes it provides nutrient-filled humus to enrich the soil and support new growth.

“Let children walk with nature, let them see the beautiful blendings and communions of death and life, their joyous inseparable unity, as taught in woods and meadows, plains and mountains and streams of our blessed star...”

—John Muir, Scottish-American writer, conservationist, and naturalist









The Wooded Heights of the Caledonian Forest

Some six thousand years ago an ancient boreal forest stretched across the Scottish Highlands. So named by Roman explorers to the area, *Caledonia* translates to “wooded heights.” The original swaths of forests are believed to contain a mix of Scots pine, holly, birch, and alder trees. The forest also supported a diverse mix of wildlife, including several rare species of birds unique to the British Isles. As traditional farming developed during the Neolithic period, the Caledonian Forest began to shrink in size, a trend that continued with the growth of logging, impact of environmental changes, and fluctuations in animal grazing. Fortunately, the forest is now being recognized as the important ecosystem that it is, and efforts are underway to restore the forest and reconnect the remaining remnants of ancient pines with new conservation and forestry growth. Coordinated conservation efforts include planting thousands of young native trees each year, identifying and removing non-native species and protecting seedlings from overgrazing. Conservationists are already seeing evidence that the forest is renewing itself and fostering an environment to support native wildlife.

Sgòr Gaoith mountain, Glen Feshie, Scotland

The Wonder of the Rainbow Eucalyptus

Throughout tropical countries like Indonesia, New Guinea, and the Philippines is a tall, fast-growing evergreen known as the Mindanao gum tree or rainbow eucalyptus. The tree was bestowed the latter name thanks to its multicolored bark that changes from vibrant streaks of fluorescent green, yellow, and orange to burnished red and purplish-brown as it peels layer by layer. It is believed that the tree achieves its abstract painted exterior through a photosynthetic process in which cells on the outer layer of bark fill with tannins, giving the tree darker pigments, while underlying layers have lower levels of chlorophyll, reflecting different colors. The peeling bark may help protect the tree against invasive insects, giving its visual spectacle a practical purpose.

Maui, Hawaii









The Aromatic Eucalyptus

Native to Australia and with more than seven hundred species, eucalyptus are also known as gum trees thanks to a red resin they exude from cracks in their bark. The evergreen species can grow shrub-like or reach tall heights, and they produce fluffy red or white flowers that house a woody seedpod at their center. The tree's bluish-green leaves emit a trademark scent when crushed and are harvested for their aromatic essential oil, which is world-renowned for its healing properties. The oil is used medicinally to facilitate open airways, reduce pain and inflammation due to arthritis, promote relaxation in spas and saunas, and serve as an insect repellent. Eucalyptus wood is eaten by koalas, is cultivated for timber and paper products, and was traditionally used by Aboriginal Australians to create anything from weapons and tools to canoes and musical instruments.

Koala in eucalyptus tree, Australia

Protecting the Rosewood

While awareness about endangered animals threatened by poachers is high, a rare tree in southern Asia is actually one of the world's most trafficked wildlife species. The Siamese rosewood, native to Thailand and neighboring countries in South Asia, has been under immediate threat in recent years. Long prized by Chinese royalty, the tree is valued for its use in creating ornately designed Ming dynasty-era style furniture known as *hongmu*. The tree grows in the Dong Phrayayen-Khao Yai Forest Complex, a protected UNESCO World Heritage site. But that doesn't keep it hidden from the tree poachers who are willing to exploit its resources under the dark of night and have even been known to kill the rangers charged with protecting the threatened tree. The species of durable, red-hued evergreen rosewood is not the only valuable asset in the Dong Phrayayen-Khao Yai Forest. The protected tropical forest complex is home to more than eight hundred fauna species, including the endangered Asian elephant, tiger, leopard cat, and banteng, as well as the critically endangered Siamese crocodile. The forest experiences a large annual rainfall and thus serves as a critically important watershed for Thailand, supporting five of the country's major rivers. The forest is the last major area of tropical forest in northeastern Thailand, and its diverse network of primary evergreen and semi-evergreen trees support an incredibly complex and variegated ecosystem.

Crocodile, Dong Phrayayen-Khao Yai Forest Complex, Thailand









Avenue of the Baobabs

Twenty or so towering baobab trees stand like soldiers along a 160-mile stretch of dusty dirt road in the midst of Madagascar's western Menabe region. Looming over the otherwise flat desert landscape, the famous trees extend dark shadows across the road as nightfall sets, appearing even to change the color of their trunks with the spectacular effect of sunrise and sunset. A man-made phenomenon, the trees are what remains of a larger swath of baobabs that was cleared to make room for agriculture. Solitary baobabs exist throughout Madagascar but are under threat due to year-round irrigation for nearby rice paddies that creates waterlogged soil that stresses the tree's roots. Due to the avenue's popularity as a tourist and photography destination, government officials in Madagascar have extended protected status to the trees, ensuring their preservation for future generations.

Avenue of the Baobabs, Madagascar

The Rainforests of the Atsinanana

Along a 1,000-mile stretch on Madagascar's eastern coast are six protected forests that are vestiges of the rainforests that used to blanket this unique country. When Madagascar separated from other continents some sixty million years ago, its flora and fauna evolved in isolation, making 80 to 90 percent of the species on the island unique. Madagascar is the only place in the world where uncommon creatures like lemurs and Malagasy primates thrive. Because the ancient forests sustain many of these rare creatures and were under great threat after only 8.5 percent of the original forest survived deforestation, they were designated as UNESCO World Heritage sites and enjoy protective measures and conservation status.

Golden lemur, Madagascar







The Depths of the Ebony Tree

Prized for its trademark black wood, ebony was used for centuries to create furniture and musical instruments, including piano keys, clarinets, and oboes, and was used by traditional craftspeople and carvers in its native Africa. The dense hardwood is some of the heaviest in the world, sinking when placed in water. This tree, with its obsidian-colored wood, prefers a solitary existence, firmly establishing an extensive root system to carry it through African dry seasons. The deciduous tree displays a pale grey, rope-like trunk, with sections of wood weaving over and through one another. It bears white, sweet-smelling flowers with a fruit-covered seedpod and spiky branches. The oldest ebony trees, which have reached 150 years or more, tend to exhibit the darkest raven wood, while younger trees produce less valuable, lighter-colored wood.

“Each generation takes the earth as trustees.”

—Julius Sterling Morton, journalist and politician

Ebony tree forest, South Luangwa National Park, Zambia

The Lone Cypress

On a rocky outcropping along California's Pacific coast, buffeted by intense winds and an unforgiving saltwater environment, stands an iconic tree known as the Lone Cypress. Part of Pebble Beach, the tree is a type of Monterey cypress, a species that exists only along a section of the US West Coast known as 17-Mile Drive. Believed to have germinated before the birth of the United States almost 250 years ago, the Lone Cypress has become a symbol for the California ideals of ruggedness and tenacity, hanging on to its precarious place above the Pacific.

Monterey Peninsula, California, US









The Monterey Cypress of Crocker Grove

Native to California's Central Coast, Monterey cypresses occur naturally in two primary locations, the headlands where the Carmel River meets the Pacific Ocean at Cypress Point and Point Lobos. In the heart of Cypress Point's native population of trees is an ancient forest of relic cypresses known as Crocker Grove. Unlike their contorted and weather-beaten cousins along the rocky shoreline, these cypress trees have achieved impressive stature and age, ranking as some of the oldest and tallest Monterey cypresses in California. The mature trees can live for up to three hundred years and grow as tall as 60 feet. The cypresses at Crocker Grove exhibit the species's trademark greyish bark and evergreen scaly leaves and feature spherical cones that open with a clicking sound to release their seeds when outside temperatures rise.

Point Lobos State Natural Reserve, California, US

The Bahrainian Tree of Life

In the midst of the stark, arid desert environment of Bahrain stands a blooming natural wonder known as Shajarat-al-Hayat, or the Tree of Life. This giant mesquite has survived the unforgiving conditions of the desert for more than four hundred years and continues to thrive. In the absence of a visible water source, it is believed that the tree has an enormous taproot through which it has accessed an underground reservoir for sustenance. Mesquite are especially adapted to desert conditions, known for absorbing large amounts of water and leaving unfavorable conditions for other nearby flora. Categorized as a mesquite species known as *Prosopis juliflora*, the Tree of Life exhibits expansive branches that dip into the desert sand only to reemerge and shoot skyward again. The desert-loving species usually presents as a stout, thorny shrub with a thick greyish-green bark, which makes the extraordinary size of Shajarat-al-Hayat even more impressive. The mesquite produces small, fragrant, saffron-colored flowers that cluster on spike-like stems, and sweet, seed-bearing yellow fruit. Because of the Tree of Life's tenacity and ability to thrive amidst a tough ecosystem, it has become a symbol of divine mythology, with attributions pointing to its location as the site of the Garden of Eden and presumptions that it enjoys the protection of the ancient Babylonian water god Enki.

“Trees are sanctuaries. Whoever knows how to speak to them, whoever knows how to listen to them, can learn the truth. They do not preach learning and precepts, they preach, undeterred by particulars, the ancient law of life.”

—Hermann Hesse, German-born poet, novelist, and painter

Tree of Life, Bahrain, Middle East







The Underwater Forest of Lake Kaindy

The turquoise blue water of a lake high in Kazakhstan's Tian Shan mountains showcases an aquatic forest of spruce trees. The tips of their trunks emerge like periscopes from the water's surface, and the tree branches remain full and lush underwater as if frozen in time. Lake Kaindy formed in 1911 after an earthquake-caused landslide created a natural dam. As rainwater filled the forest, the trees became submerged but survived thanks to the lake's incredibly cold temperature. Limestone deposits lend the water its ethereal bluish-green reflection.

Lake Kaindy, Kazakhstan

The Ethereal Weeping Willow

With long swaying branches, each lined with oblong, tapered green leaves, the weeping willow is an ethereal tree. It moves with the breeze, like a dancer's arms, gliding through space. A fast-growing species, willows thrive when planted near water and can grow to a height of 35 to 40 feet, extending their limbs in a shade-producing canopy enveloping the trunk. Recognized as one of the first signs of spring, yellow buds emerge on the tree's ground-sweeping boughs as early as February. Weeping willows originated in China, where they were prized for their cuttings. When Napoléon Bonaparte was exiled to St. Helena island in the southern Atlantic, he took refuge under a willow tree, ultimately requesting to be buried beneath it. Cuttings from the tree have germinated worldwide, thanks to Napoleonic fans, giving relatives of the tree the name "Napoléon's willow."

*"It were a blessed sight to see
That child become a willow tree,
His brother trees among.
He'd be four times as tall as me,
And live three times as long."*

—Catherine Maria Fanshawe, English poet





A landscape photograph showing numerous large, reddish-brown petrified wood logs scattered across a dry, gravelly terrain with sparse green grass. The sky is filled with large, white, fluffy clouds against a blue background. A white rectangular box with a thin gold border is positioned in the upper left quadrant, containing a quote and attribution.

“Look deep, deep into nature,
and then you will understand everything better.”

—Albert Einstein, German-born theoretical physicist



The Curse of the Petrified Forest

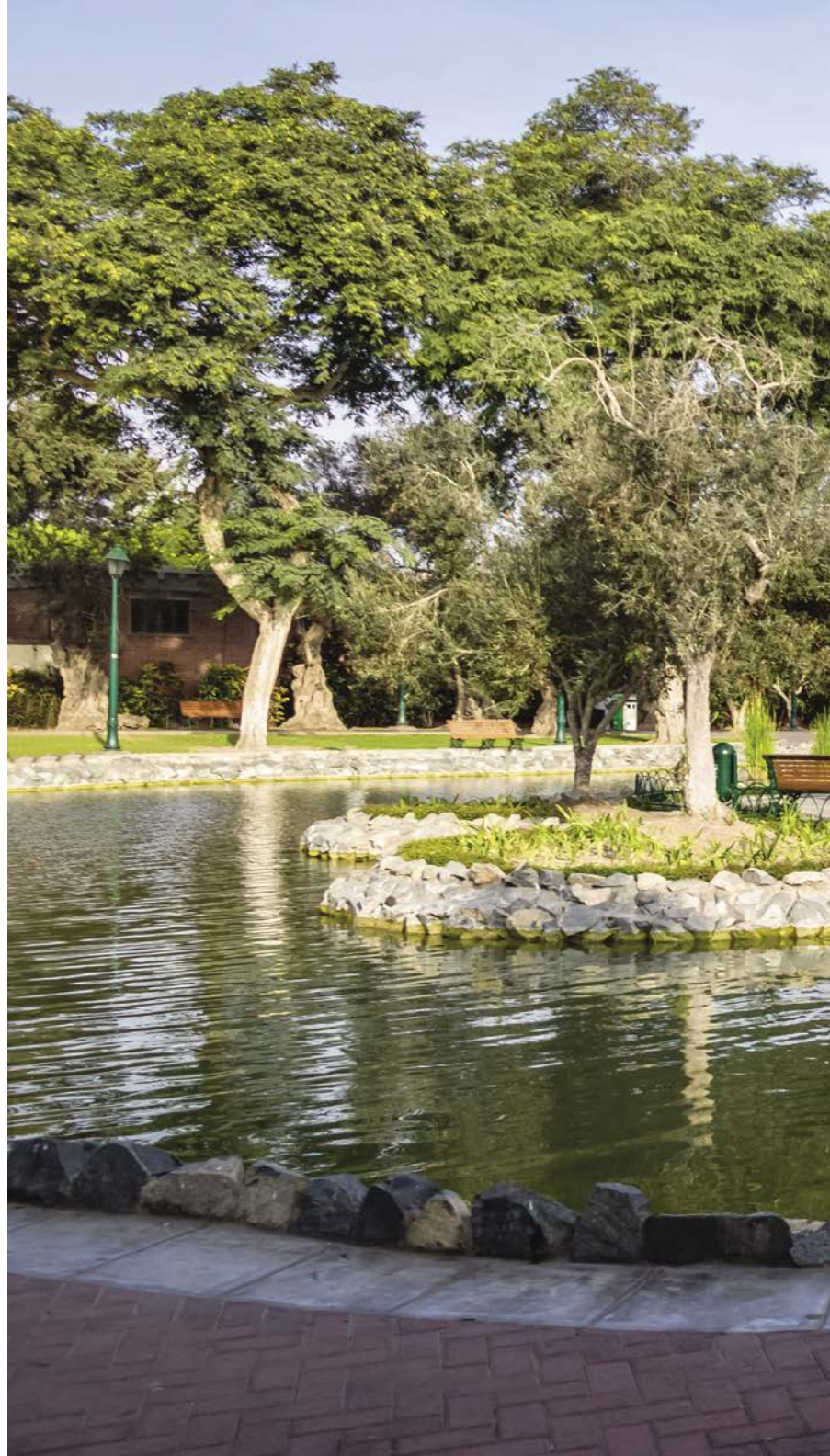
Once a lush and verdant rainforest environment, more than ninety thousand acres of Arizona's barren desert landscape is now home to a crystal forest of petrified wood. One of the largest deposits of petrified wood in the world, Arizona's collection dates back some two hundred million years to a time when standing trees such as ginkgo, tree ferns, and pines were swept away and buried so quickly in the sediment and debris of an ancient river that oxygen was cut off and the decay process ceased, opening the door for various minerals to enter the porous wood and crystallize the material. Amazing natural crystals such as clear quartz, lavender amethyst, yellow citrine, and smoky quartz formed in cracks of some of the logs. Other logs bear an array of colors reflecting a rainbow of compounds such as iron, carbon, and manganese. Because the quartz within the logs is so brittle, when the trees came under stress the logs fractured with a clean break, appearing as though they were literally sawed in half. The crystallized wood became popular for use in jewelry and ornamental stone decor, but legend has it that unlawfully sneaking samples from the national park results in bad luck. A "conscience pile" of returned stones reflects owners' wishes to rid themselves of the curse of petrified wood and return it to its resting place in the desert.

Petrified Forest National Park, Arizona, US

The Peruvian Olive Grove Forest

One hundred olive saplings journeyed with Spaniard Don Antonio de Ribera when he sailed from Seville, Spain, to Lima, Peru, in 1560. Only three plants survived the transatlantic voyage and were planted in the midst of Lima's San Isidro district. From those three saplings sprung a vibrant grove of more than three thousand olive trees, known today as the Bosque el Olivar, which provides a welcoming environment to more than twenty species of birds. The Peruvian War of Independence in the early 1800s took its toll on the tree population, with many trees falling to the hands of disgruntled Spanish royalists. Now, around 1,600 trees with enormous gnarled trunks and trademark oblong leaves remain to serve as an oasis to Lima's residents. Today, the park enjoys protection as a national monument and the trees are a living monument of Lima's history.

Olive Grove Park, Lima, Peru









The Symbolism of the Olive Tree

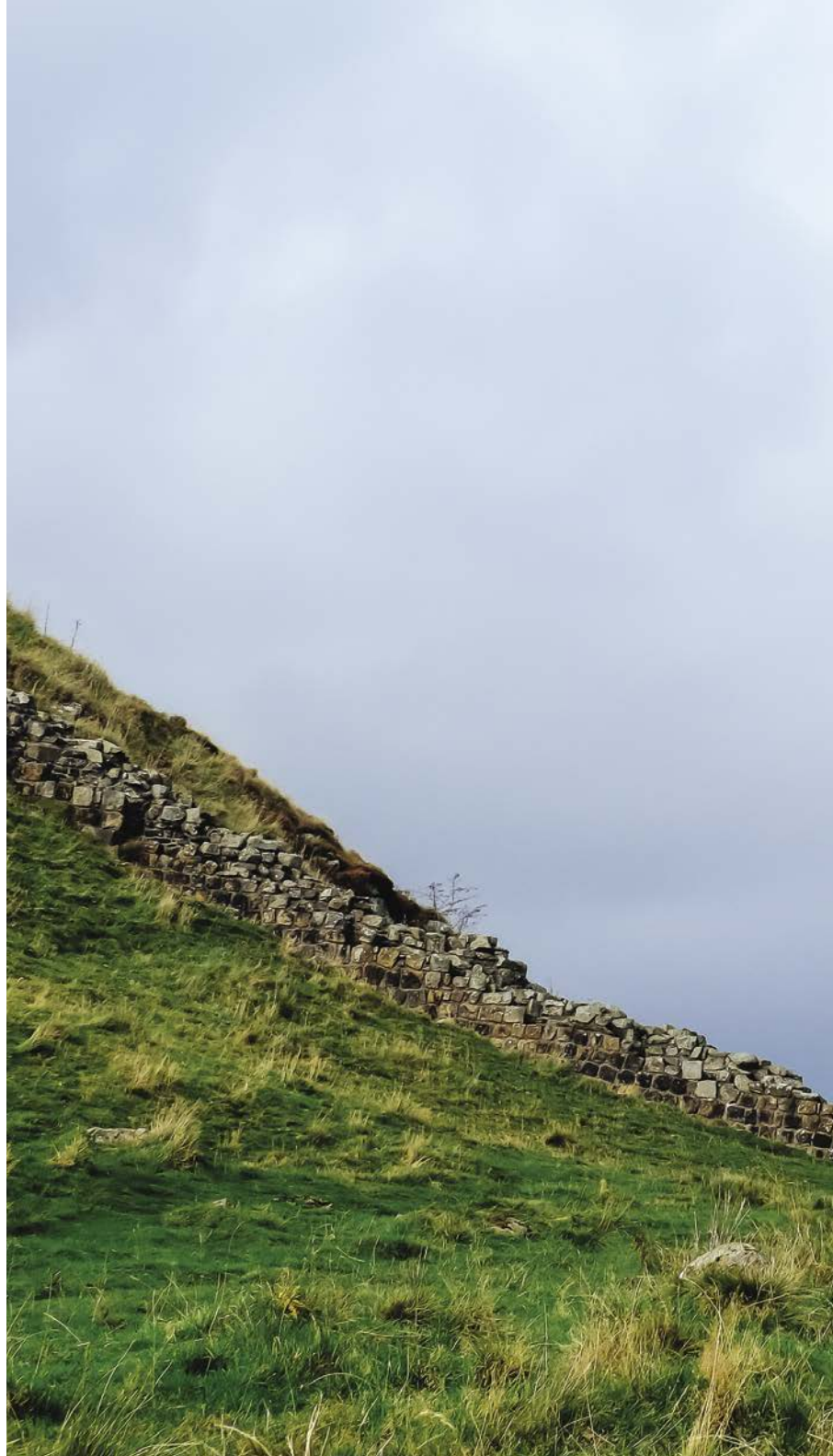
Perhaps no other tree has as storied and extensive a history in the Mediterranean landscape and culture as that of the olive. Scientists have dated the tree's origins to nearly eight thousand years ago, where it first emerged near what are now Turkey and Syria. Olive trees can thrive in unforgiving, rocky soil conditions and live from three hundred to six hundred years, giving them a reputation as hardy, resilient trees. Because of the tree's value, it has routinely been used in sacred rites and ceremonies across various religious traditions. As long as two thousand years ago, Egyptians buried their dead with olives. From Islam to Judaism to Christianity, olive oil has long been used for sacred anointing and in religious ceremonies since ancient times. The modern phrase *extending an olive branch* stems from the biblical story of Noah's ark, when Noah sent a dove to search for land after the Great Flood and it returned holding an olive branch. The Mount of Olives in Jerusalem is the site of many biblical stories, from Old Testament examples with King David and King Solomon to Jesus' use of the site for prayer and rest as well as meetings with his disciples before the crucifixion. Today, it is a location for modern religious pilgrimage, burial, prophecy, and worship.

Olive grove, Alora, Spain

The Sycamore Gap

In England, a lone sycamore captures the eye as it proudly stands solo among the rolling hills of an ancient Roman boundary line known as Hadrian's Wall. The area is known as Sycamore Gap because of the tree's placement in a dramatic dip created thousands of years ago as melting water flowing beneath ice sheets carved channels into the land. It's also one of the few visible trees that appear along the undulating, otherwise stark landscape. Studies show there were probably more trees in closer proximity to the gap, but they were removed for hunting purposes and to ensure a clear view of approaching enemies. The tree's notoriety surged after it was featured in films and movies during the 1990s, and it continues to be a popular destination for visitors enjoying Northumberland National Park.

Sycamore Gap, Northumberland, UK









The Venerated Banyan Tree

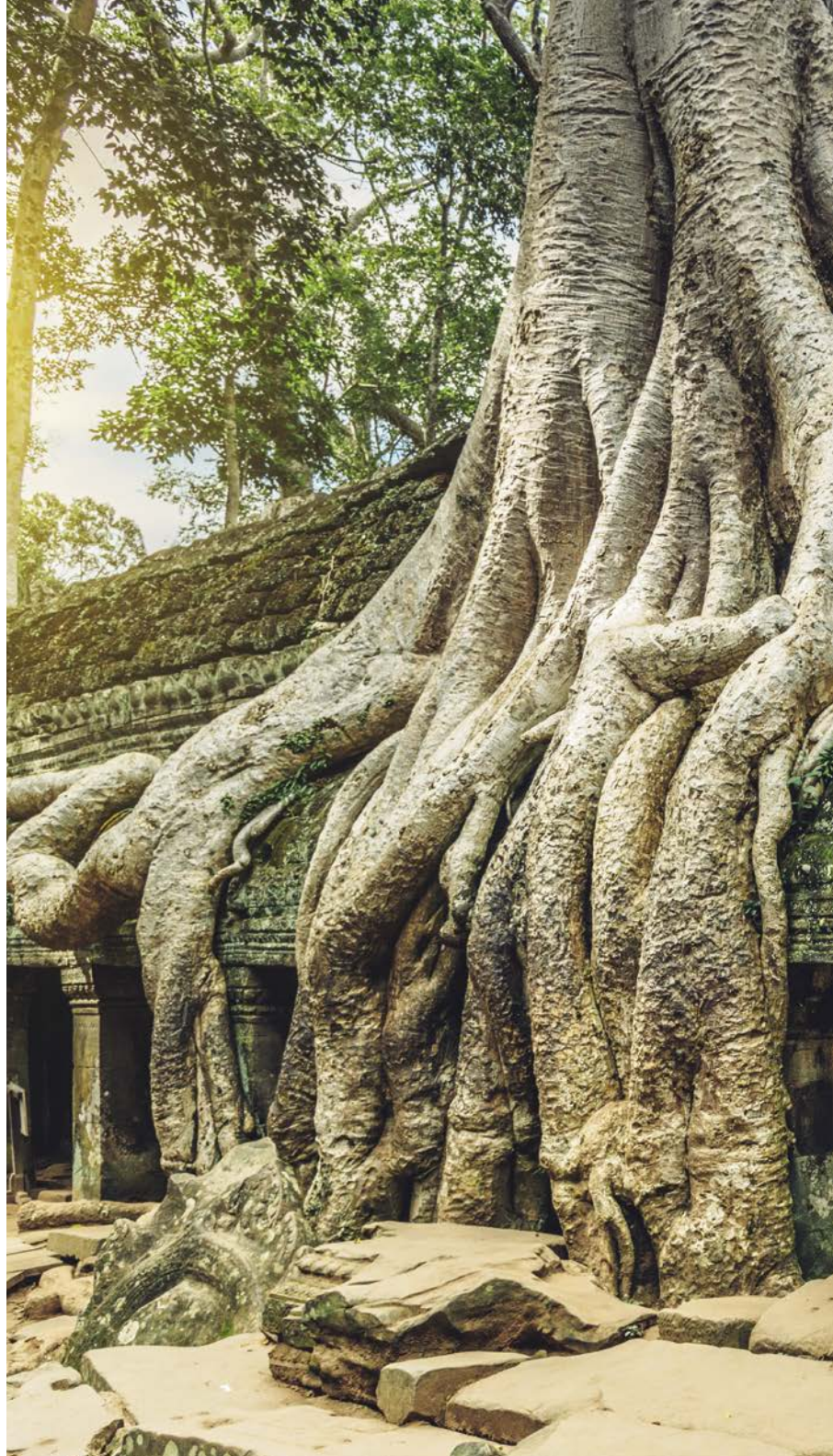
Throughout southern Asia, a species of fig tree known as the banyan has a long and storied place in religious and mystical history and meaning. The tree can be pollinated only by a unique species of wasp. When tiny flowers deep inside fleshy fig fruits are ready to be pollinated, they emit a scent that beckons a female wasp, who enters the fig through a small hole and lays her eggs inside, simultaneously pollinating the fruit. The fertilized fruit is then eaten, and the seed is excreted by birds on different banyan trees, where it takes root, ultimately consuming the old tree and establishing itself anew. The evergreen banyan displays a twisted, rope-like trunk and expansive branches, with aerial roots that drip like vines toward the ground, some taking hold and establishing themselves as new trunks. This process allows some banyan trees to extend a leafy canopy for up to several acres, thus making banyans popular sites for community gatherings and cultural exchange. Revering the tree for its enormous size, unique pattern of growth, and method of reproduction, southern Asian cultures have assigned the tree symbolism related to the universality of life, enlightenment, and sacred meaning for thousands of years. When the Buddha attained enlightenment, he is believed to have sat under a banyan tree for seven days embracing his state of awakening. To this day, many enormous banyan trees are protected from being cut down and are adorned with ribbons and small religious figurines tucked within their twisting roots.

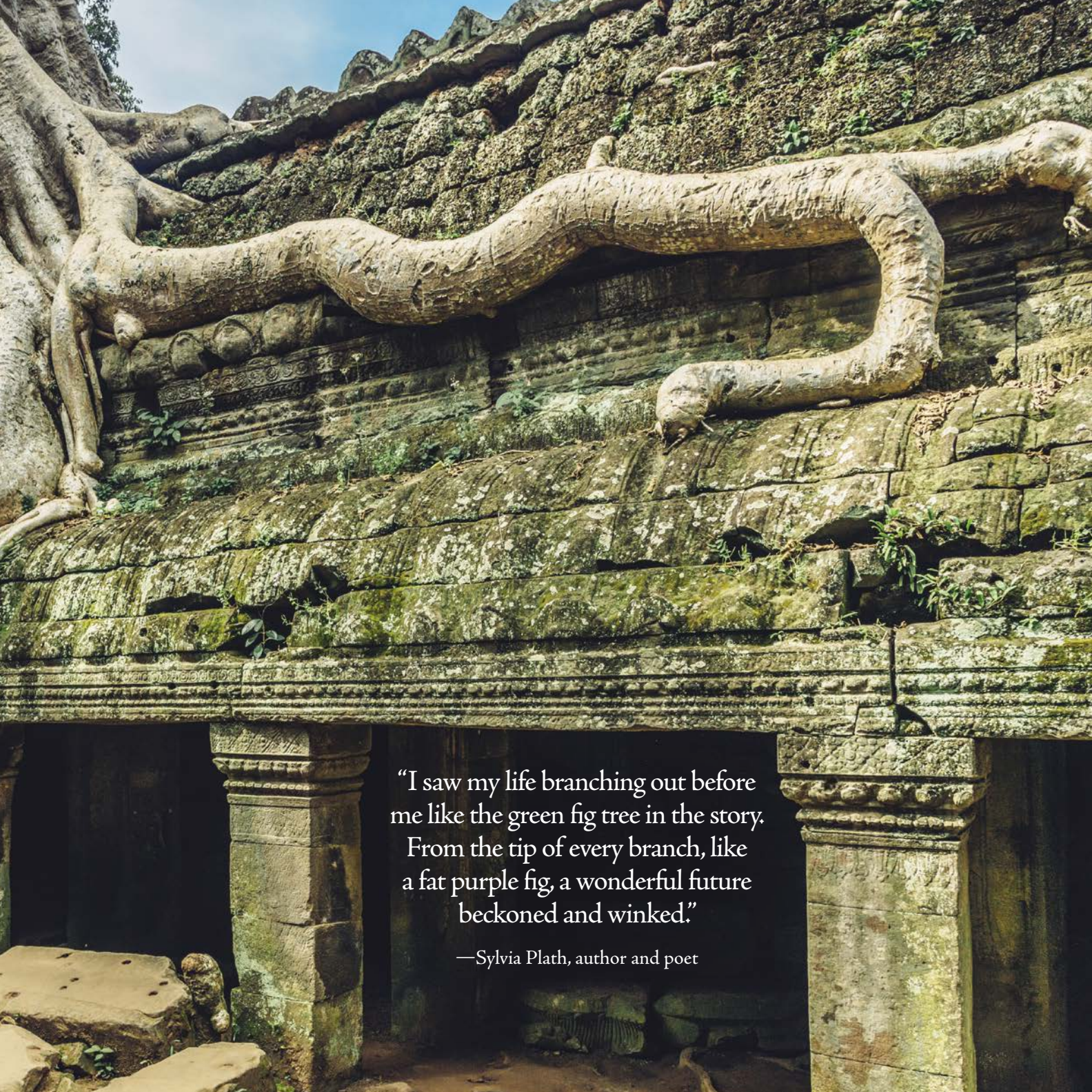
Buddha head in banyan tree, Bangkok, Thailand

Strangler Figs of Angkor Wat

Deep in the tropical jungle near Cambodia are the eight-hundred-year-old ruins of Angkor, the capital of the Khmer people that flourished for nearly five hundred years before declining in the 1600s. Hidden from awareness until being rediscovered by a French missionary in 1860, the ruins were reclaimed by nature and have become entwined with enormous strangler fig trees. Now a UNESCO World Heritage site, efforts are underway to restore and preserve the ancient temples and city structures, the largest of which is the religious temple Angkor Wat. Uniquely adapted to the jungle environment, strangler fig trees wrap and entwine their roots around a host tree and its roots, slowly cutting off nutrients, killing the host, and absorbing it within a weaving trunk of new growth. The old tree becomes a hollowed-out habitat for numerous insects and tropical fauna such as fruit bats, reptiles, amphibians, and birds. The snaking roots of the figs in Cambodia have also pervaded the cracks and crevices of crumbling temple walls, presenting a challenge for historical architects, who must consider whether felling a tree entwined with the ruins will benefit the structure or lead to greater instability. Despite its imposing and unforgiving approach to life, the fig tree is known as a keystone species in the jungle, as its reliable production of fruit sustains life for countless local wildlife throughout the year.

Ta Prohm Temple, Angkor Wat, Siem Reap, Cambodia

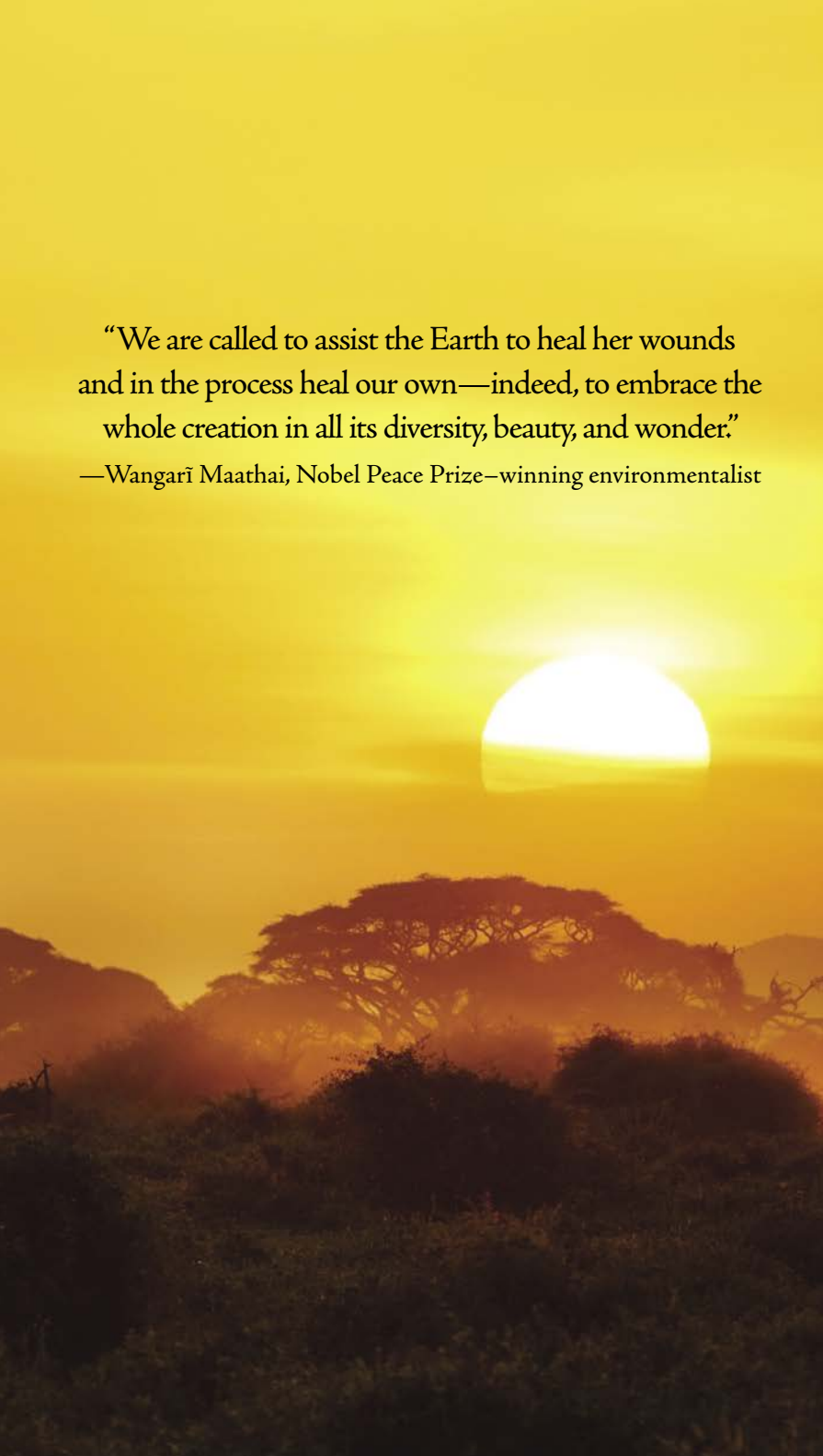




"I saw my life branching out before
me like the green fig tree in the story.
From the tip of every branch, like
a fat purple fig, a wonderful future
beckoned and winked."

—Sylvia Plath, author and poet





“We are called to assist the Earth to heal her wounds
and in the process heal our own—indeed, to embrace the
whole creation in all its diversity, beauty, and wonder.”

—Wangari Maathai, Nobel Peace Prize–winning environmentalist

A Champion for Trees

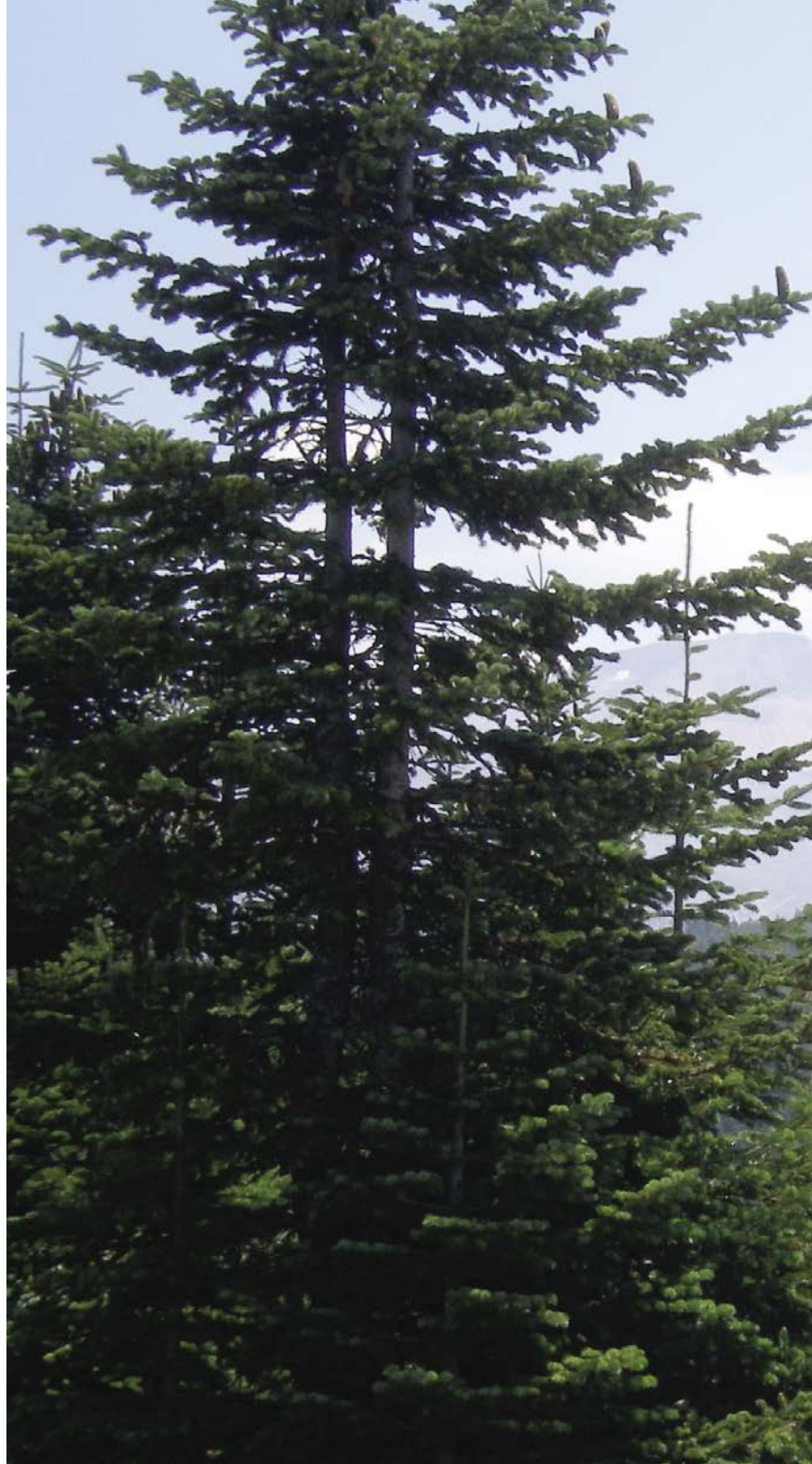
When Wangari Maathai was growing up in the lush and fertile environment of central Kenya, there was no word for *desert* in the native language of her Kikuyu people. But by the time she was an adult in the 1970s, the land was arid and parched, with a lack of water sources affecting the peaceful existence and stability in the country and with women often taking the brunt of the impact. They were having to walk farther distances to obtain clean water, their food supply was less secure, and firewood for fuel and shelter was decreasing. Eastern and central Africa’s first female to hold a doctorate degree, Maathai became active with the National Council of Women of Kenya and launched a community tree-planting effort to help replenish natural resources, prevent soil erosion, and conserve water. Maathai’s initiative sprouted like the trees she planted and grew into a national organization known as the Green Belt Movement, which aimed to reduce poverty and promote environmental conservation through tree planting. For her work mobilizing African women to think and act sustainably, resulting in the planting of more than thirty million trees, Maathai was awarded the Nobel Peace Prize in 2004. Although she passed away in 2011, Maathai’s work through the Green Belt Movement lives on today.

Amboseli National Park, Kenya

The Peril of the Nordmann Fir

Deep in the Caucasus Mountains of the former Soviet republic of Georgia, an annual Christmas tree harvest tests the mettle of men, women, and children alike. These brave souls risk their lives ascending the branches of prized Nordmann firs to make mere pennies for every pound of pinecones they toss high from the canopy to the forest floor below. Once the cones are harvested, they are shipped throughout Europe where they dry and open, releasing seeds that more than a decade later will grow into picture-perfect Christmas trees. Of the seventy-five million Christmas trees produced on the European continent, nearly 60 percent are Nordmann firs. Named for Finnish biologist Alexander von Nordmann, the trees are popular for their symmetrical shape; pleasant aroma; and soft, long-lasting needles. Endemic to the Black Sea region, the trees are a desirable source of seeds thanks to a belief that wild seeds from native trees produce better Christmas trees than seeds from non-native trees. And so, each year villagers from throughout the remote boreal forest region ascend again, some perishing in their pursuit, and others harvesting enough pinecones to see another season.

Caucasus Mountains, Soviet Republic of Georgia



The background of the image is a scenic landscape. In the foreground, there are several tall, dark green evergreen trees, likely spruce or fir, with dense foliage. Beyond the trees, a vast valley filled with a dense forest of similar trees stretches towards the horizon. In the distance, a large, rounded mountain peak is visible, its slopes appearing light-colored, possibly due to snow or mist. The sky above is a pale blue with soft, white clouds. The overall atmosphere is serene and natural.

*“O Christmas tree, O Christmas tree,
How loyal are your needles.
You’re green not only in the summertime,
No, also in winter when it snows.
O Christmas tree, O Christmas tree,
How loyal are your needles.”*

*—“O Tannenbaum,”
by Ernst Gebhard Salomon Anschütz*





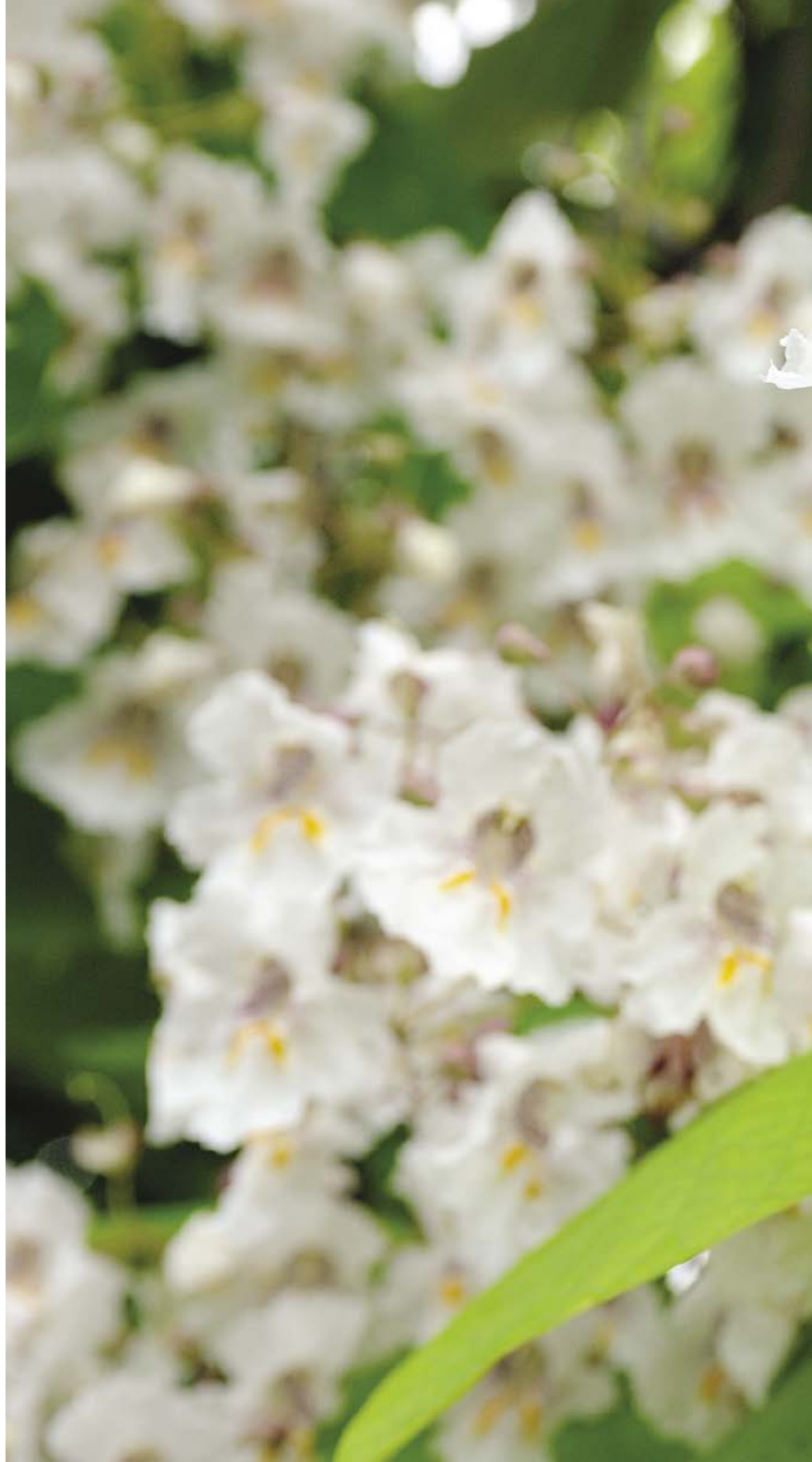
History of the Christmas Tree

For millennia, humans have associated evergreen trees with resilience, eternal life, and the promise of renewal. From the ancient Egyptians and Romans to Celtic druids and Vikings, evergreens were frequently used in celebrations near the winter solstice, when after the darkest night of the year, the sun slowly began to return and with it, the promise of spring and new growth. As Christianity spread and pagan celebrations were replaced with the Christmas holiday, the evergreen symbolism was adapted and incorporated into the Christian celebrations. It is believed that sixteenth-century Protestant reformer Martin Luther began the practice of adorning evergreen trees with candles after walking home one evening and being inspired by the image of stars in the night sky twinkling between tree branches. The tradition spread throughout Germany, and when German settlers arrived in America, the practice of decorating evergreen trees for Christmas came with them. Despite attempts by Puritan leaders to condemn the practice as a pagan tradition, the Christmas tree persisted and had a moment in the spotlight in 1846 when Britain's Queen Victoria, married to German Prince Albert, was featured in *The Illustrated London News* standing around a Christmas tree with their family. By the late 1890s, Christmas trees were being sold commercially in the US and have become a centerpiece of holiday celebrations, gracing homes throughout the country ever since.

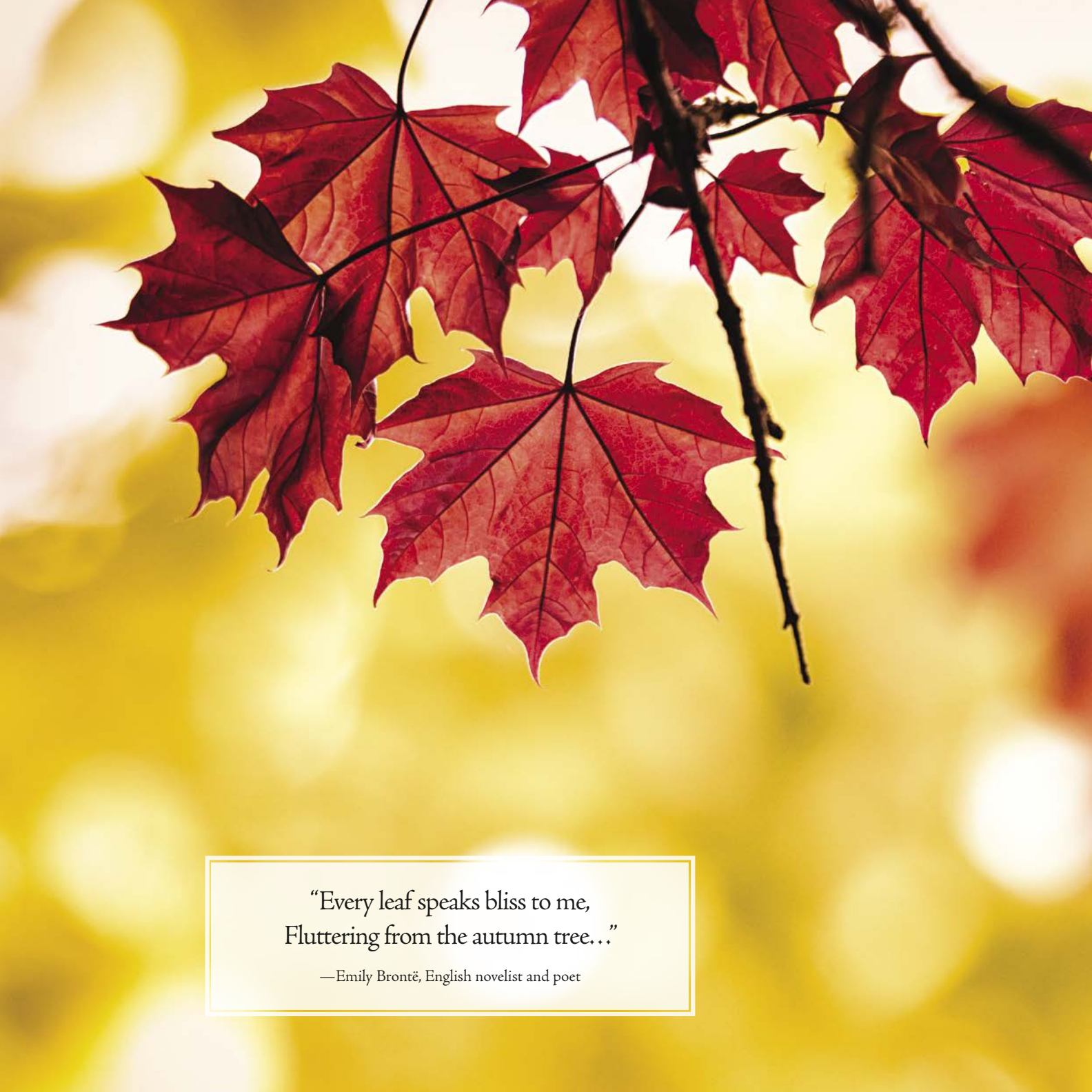
Carpathian Mountains, Ukraine

The Catalpa's Alabaster Blooms

A standout among the lush spring arbor, the catalpa tree commands attention with its unusual shape and effluence of billowing alabaster blooms. The flowers emit a fragrant aroma that mixes with honeysuckle in warm spring air to draw in passersby. Each bloom appears as though it has been hand-painted by an artist, with delicate purple splatters emanating from the center of a white canvas, interspersed with blots of amber and yellow. The tree's trumpet-like flowers attract hummingbirds and bees and also play host to the catalpa sphinx moth. Commonly found in forests from the midwestern United States to the country's East Coast, the catalpa is also known for its oversized, heart-shaped leaves and dangling seedpods, which have inspired nicknames for the tree, including "cigar tree" and "Indian bean tree."







“Every leaf speaks bliss to me,
Fluttering from the autumn tree...”

—Emily Brontë, English novelist and poet



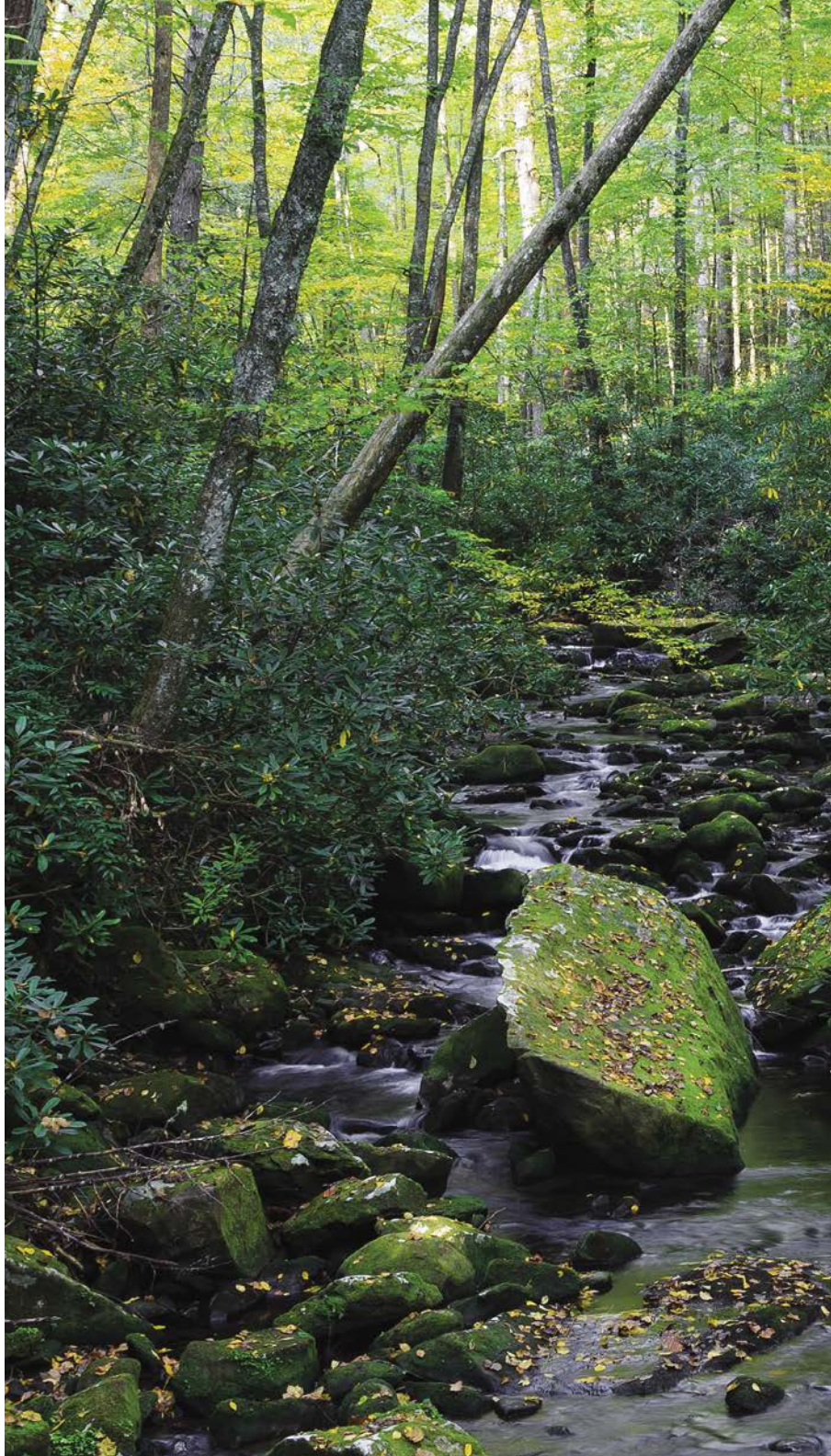
A Striking Symbol

The image of one single leaf has embodied the pride and spirit of Canada since the 1700s. With 10 species of maple trees native to Canada, the tree is a familiar sight throughout the country, with the exception of the northern territories. From sugar maples in the east to bigleaf maples on Vancouver Island to red and silver maples and ashleaf, mountain, vine, and Douglas maples, the prolific tree has provided inspiration and a common identity among Canadians for centuries. When a group of French Canadians formed the Saint-Jean-Baptiste Society in 1834 to strengthen a shared linguistic and cultural heritage, they adopted the maple leaf as an emblem. Within a decade, national publications were calling for the maple leaf to be adopted as the country's national symbol, and Canadian soldiers were displaying the leaf on their uniforms. Inspired by a falling maple leaf in Toronto, songwriter Alexander Muir penned what would become a popular national song during the late 1800s called "The Maple Leaf Forever." Soon the symbol was incorporated into the coats of arms of both Ontario and Quebec and began appearing on coins through the turn of the century. Canadian Olympians wore the symbol on their uniforms during the early 1900s, and by 1965 an eleven-point red maple leaf was added to the Canadian national flag, becoming a recognizable symbol of the nation worldwide.

A Poem As Lovely As a Tree

Recited nationwide on Arbor Day celebrations and one of the most recognizable arboreal poems of all time is New Jersey native Joyce Kilmer's "Trees." Written in 1913, the poem not only evokes the natural beauty and ecological aspects of trees but directly references a relationship with the divine. Previously an atheist, Kilmer converted to Catholicism after feeling called to faith during his young daughter Rose's battle with polio. Around the same time of his conversion, Kilmer wrote metaphorically about nature's praise of the divine in his now-famous poem in the line, "A tree that looks at God all day, and lifts her leafy arms to pray." Kilmer went on to enlist in the US Army during World War I and was killed in the line of duty at the age of 31 in France. A number of American landmarks bear Kilmer's name to this day, including the Joyce Kilmer-Slickrock Wilderness area along the North Carolina/Tennessee border. The preserved land is home to the Joyce Kilmer Memorial Forest, a 3,800-acre old-growth forest that is accessible only by foot and features more than one hundred tree species, many of which are more than four hundred years old.

Joyce Kilmer Memorial Forest, North Carolina, US









American Sycamore

The bark of the trunk of the American sycamore takes on the look of camouflage as it peels off in chunks, crumbling and crunching underfoot and in the palms of hands. The enormous, supple leaves of the tree provide a welcome canopy and flutter to the ground as summer turns to fall. Spikey, ball-shaped seeds adorn the tree in winter and litter the earth below as they disperse during spring, a source of food for small mammals like squirrels and birds. Native Americans nicknamed American sycamore trees “ghosts of the forests” because of their unique, mysterious appearance and pale, apparition-like branches that dance in the sky like spirits when bare. An iconic tree whose boughs unite in a stunning archway over tree-lined suburban streets, the American sycamore is native to the United States and grows in a variety of soils and landscape environments. Its trunk often hollows out as it develops and historically provided shelter for livestock and early American settlers. The tree’s wood was a popular choice in the construction of railroad cars, wheels, and grain barrels among pioneers.

*“I will learn fifteen types of wind
and know the weight of tomorrow’s
rain by the rustle of the sycamores.”*

—Claire Keegan, Irish writer

The Flowering Tulip Tree

Yellow- and orange-striped, goblet-shaped flowers bloom in late spring. Eye-catching foliage transitions from rich green to bright gold in the fall. Related to the magnolia, the beautifully ornate tulip tree is native to the US Ohio River Valley and is featured as the state tree of Kentucky, Indiana, and Tennessee. The tallest of the North American hardwoods, tulip trees can stand more than 100 feet tall and live between two hundred and three hundred years. As the United States was settled, tulip tree wood was a popular choice for furniture and musical instruments. Cemented in a place of historic prominence, tulip trees were selected by George Washington for his Mount Vernon residence, and American woodsman Daniel Boone used a tulip tree canoe to transport his family to the western frontier. Native Americans also favored the tree's light wood for canoe making and adapted the tree's bark and leaves for medicinal teas and ointments.







“The creation of a thousand
forests is in one acorn.”

—Ralph Waldo Emerson, American essayist and poet



The Acorn and the Mighty Oak

It takes just one tiny seed, protected within the fleshy casing and tough outer shell of an acorn, to plummet from the high branches of a mature oak to the ground, split open, and send an embryonic root down into fertile soil to establish a foundation and begin absorbing water and nutrients. If the burgeoning rooted seedling survives both the jaws of various hungry animals and winter, it will continue to swell and burst through its outer casing, sending up a shoot and deriving nutrients from sunlight as it continues to grow. If even luckier, the sapling will persist and become a mighty oak tree. For centuries, acorns and oaks have been cultural symbols of strength, perseverance, and power, representing the process from which something grand can emerge from even the most unassuming, small object. The Sanskrit word for oak references the soul of life and concept of thunder. For druids and ancient Celts, acorns are a central symbol of growth and unlimited potential, representing the importance of life cycles from restorative dormancy through periods of rapid growth and activity. Because oak trees often have hidden root systems that expand as far and wide as the visible trees themselves, they represent the spiritual, inner realm of life and the influence of that which cannot be seen. The word *druid* can literally be translated as “oak knowledge” and represents a cultural practice deeply entwined with honoring and embracing lessons from the natural world.

The Flowering Dogwood

When the last of winter thaws, one of the first signs that spring has truly arrived is the sight of striking dogwood flowers appearing on trees along the forest understory and in neighborhoods up and down the East Coast and west to Texas in the United States. With nearly thirty different species found growing around the world, the most recognizable element of the flowering dogwood tree are the blossoms, most commonly blooming in alabaster white or rosy pink. They are composed of four bracts with small indentations at their tips, as if a tiny bite has been chewed from each end. At the center of the bracts is the actual flower, appearing as a bud composed of small points. The blossom's unique appearance has made it the subject of a Christian legend, which says the bloom represents the crucifix on which Jesus died and that the red-tinged tips of the bracts represent the wounds where he was nailed to the cross. The Native American Cherokee people also had a legendary belief that a tribe of tiny people lived in the tree. Known as The Dogwood People, they shared traditions on how to live harmoniously with nature and offered protection over the elderly and young children. The Dogwood People also encouraged acts of kindness with no expectation of anything in return. Native Americans also utilized the dogwood to produce medicines and dyes. The blooming dogwood also signaled the change of seasons and indicated a fertile opportunity to plant next season's harvest. The wood of the tree was used to create small, sharp tools and dagger-like spears and arrows. First known as the "dagwood" in sixteenth-century England, the name was altered a century later to dogwood, perhaps because the tree's wood was often boiled to create a bath for dogs that helped treat sundry skin conditions.







The Monkey Puzzle Tree

It emerges from the ground as an all-green seedling with an almost reptilian appearance, then morphs into a more mature tree with bark like a palm tree and whorling branches, covered in a spiral of spiky, scale-like leaves. Found on the slopes of rocky Chilean volcanoes and on the west coast of South America, the monkey puzzle tree, scientifically known as *Araucaria araucana*, can grow up to 150 feet and live for a thousand years. Earning its common name from the tale that even a monkey—none of which exist in its native environment—would not be able to climb the spiky trunk and branches of a mature tree, the monkey puzzle is an ancient species that existed for some two hundred million years alongside the dinosaurs. The monkey puzzle tree is the national tree of Chile and its stiff, leathery leaves and bark are highly heat resistant, allowing the tree to survive amidst lava flows and frequent fires in its environment. Locally named *pehuén* and sacred to the Chilean Pehuenche people, who are known as People of the Trees because of their close relationship with the tree, the tree's globular, thorny seeds have been part of the Pehuenche diet for thousands of years. Called *piñones*, they can be eaten raw, evoking a nut-like flavor; can be boiled or roasted, or can be milled into a flour that serves as the base of bread or is fermented to create a beverage. In reverence of their life-sustaining properties, the Pehuenche consider it disrespectful to utter words under the spiny boughs of the monkey puzzle tree and go about collecting the seeds in silence.

Araucária forest, Paraná, Brazil

The Midsummer's Celebration of the Linden Tree

Its sweet-smelling pale yellow blossoms burst forth in bunches like happy fireworks exploding from among heart-shaped green leaves. Known as the bee tree, the linden attracts hundreds of bees with its intoxicating summer scent. Blooming around the summer solstice, the linden has played a starring role in midsummer celebrations, heralding the celebratory atmosphere of the longest day of the year. Its notable scent has made linden flowers an ideal ingredient in perfumes, soaps, and lotions, as well as in edible delicacies like honey, teas, and syrups. The floral elixir can also induce relaxation and have a calming effect, as well as serve as a cold and flu remedy. The leaves can be combined in salads and also dried and ground into a type of flour. They are also known for having anti-inflammatory properties. The national tree of several Slavic countries, the linden has been featured in folklore across traditional European cultures for centuries. Associated with the beauty and grace of nature, as well as Freya and Frigga, the Norse goddesses associated with love and partnerships, linden has often been woven into garlands that adorn people, homes, and animals, warding off bad luck and welcoming blessings during the longest day of the year. Women in old Europe would often honor the tree with offerings of food or dancing praise, seeking blessings of fertility and good fortune.





“Her hair was long, her limbs were white,
And fair she was and free;
And in the wind she went as light
As leaf of linden-tree.”

—J.R.R. Tolkien, English writer





Colombia's Colossal Wax Palms

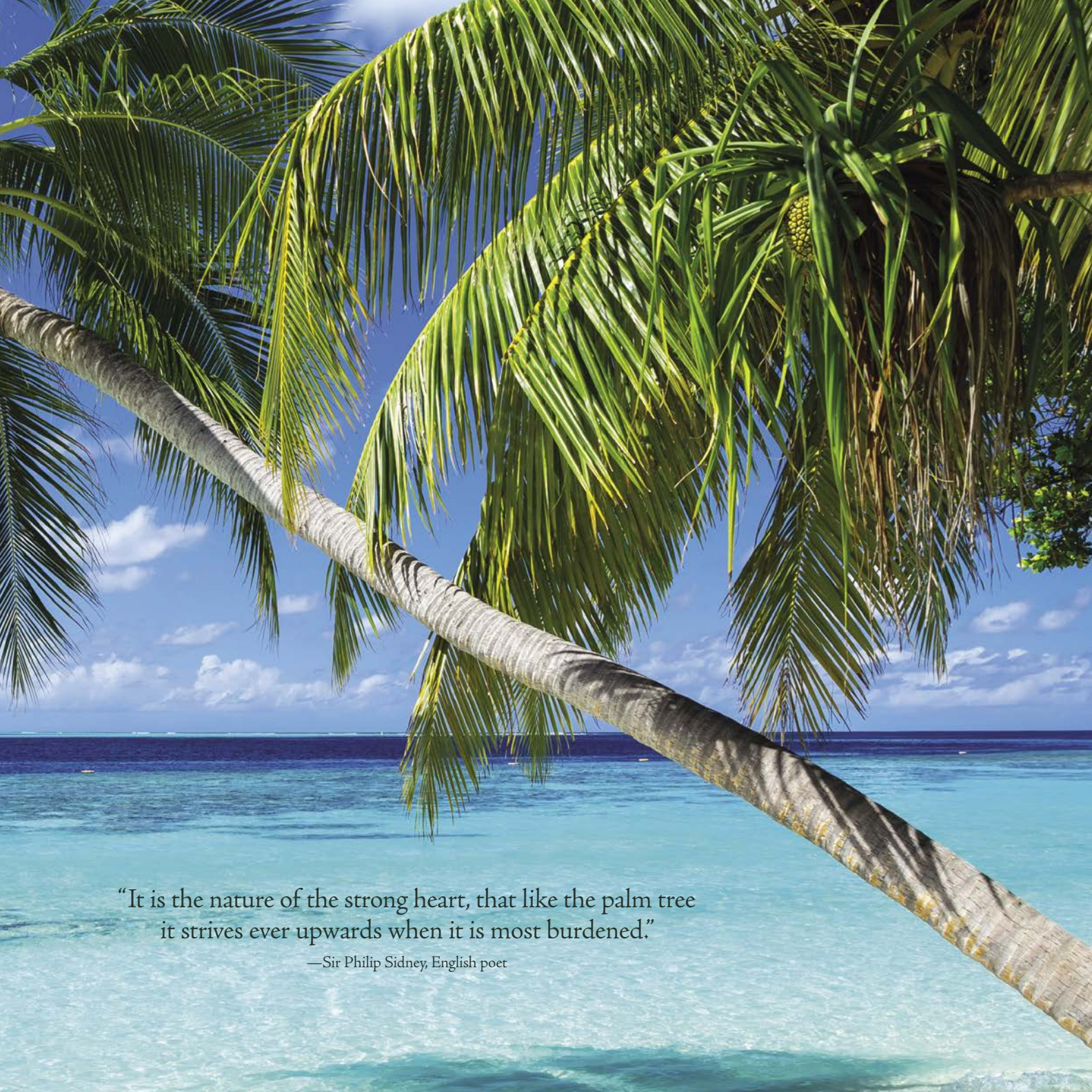
Like the masts of ships bobbing in a foggy bay, the palm frond tops of Colombia's Quindío trees rise from their pencil-thin trunks nearly 200 feet in the air, disappearing into the misty clouds that pervade this verdant and undulating Andean cloud forest. The national tree of Colombia, the Quindío wax palm—so-named for the waxy substance emitting from its trunk and leaves—was traditionally felled to harvest leaves that were used in Christian religious celebrations around Holy Week, and indigenous Colombian people used the trunk as material for fence poles and in construction. Wax from the tree was used in candle making and to light lamps and torches, and the colossal trunks had modern appeal for use in utility poles and as water pipes. Now a protected species and home to other endangered species like the yellow-eared parrot, logging of the unique trees is prohibited.

Cocora valley, Colombia

The Palm— More Than a Tropical Icon

Its curving, sand-colored, unbranching trunk is topped with spear-like green fronds that rustle with the ocean breeze, making the palm tree an international symbol of a tropical paradise. But there are more than 2,500 species of palm in the *Arecaceae* family, and they run the gamut from trees to climbers and shrub-like plants. They are actually more closely related to herbs and grasses than trees, as they do not grow rings and lack wood. Their lean trunks grow, instead, through a process of thickening. Preferring hot climates, some species, like the Chinese windmill palm, have adapted to survive in cooler climates, with some plants growing as far north as the foothills of the Alps in Switzerland. Palms have also traditionally been found along the banks of the Jordan River in the Middle East and have a strong presence in religious history. Palm branches symbolize good fortune and victory, and they were often depicted on coins and on religious buildings during biblical times. Christians use palms every Easter season, commemorating the biblical story of Jesus' triumphant return to Jerusalem prior to his death and resurrection. Catholics often save palms used on Palm Sunday the week before Easter, which are later burned to create ashes during the following year's Ash Wednesday observance. Palms are also featured in the Qur'an, and they symbolize peace and abundance in Judaism.





“It is the nature of the strong heart, that like the palm tree
it strives ever upwards when it is most burdened.”

—Sir Philip Sidney, English poet



Pantelleria's Protective Gardens

Located off the southern coast of Italy, the arid, windswept climate of the volcanic island of Pantelleria doesn't support much flora. So the island's seven thousand inhabitants have devised a way to protect the precious orange and lemon trees that otherwise would have no access to fresh water and would experience damage from the environment's strong winds. Mimicking a sacred womb space, the gardens have been built for centuries—they are even referenced on a Sumerian tablet dating as far back as the third millennium B.C.E. Using a historic construction technique known as *muro a secco*, farmers gather boulders directly from the ground and erect them in a dome-like circular structure around the citrus trees, protecting them from harsh winds but allowing enough sunlight through the top for the tree to flourish. No mortar is used in their construction; rather, the rocks support each other to form circular stone-walled structures known as *giardini Panteschi*. Moisture in the form of dew gathers on the volcanic rock used to build the structures, slipping through crevices and falling to the ground as a natural irrigation system for the tree. The shelters are self-contained agronomic systems, supporting the citrus tree in the absence of any human intervention. They take on a sacred, almost tree-temple feel inside, all while creating a climate-controlled environment that works solely to support the flourishing viability of the tree.

Pantelleria garden, Sicily, Italy

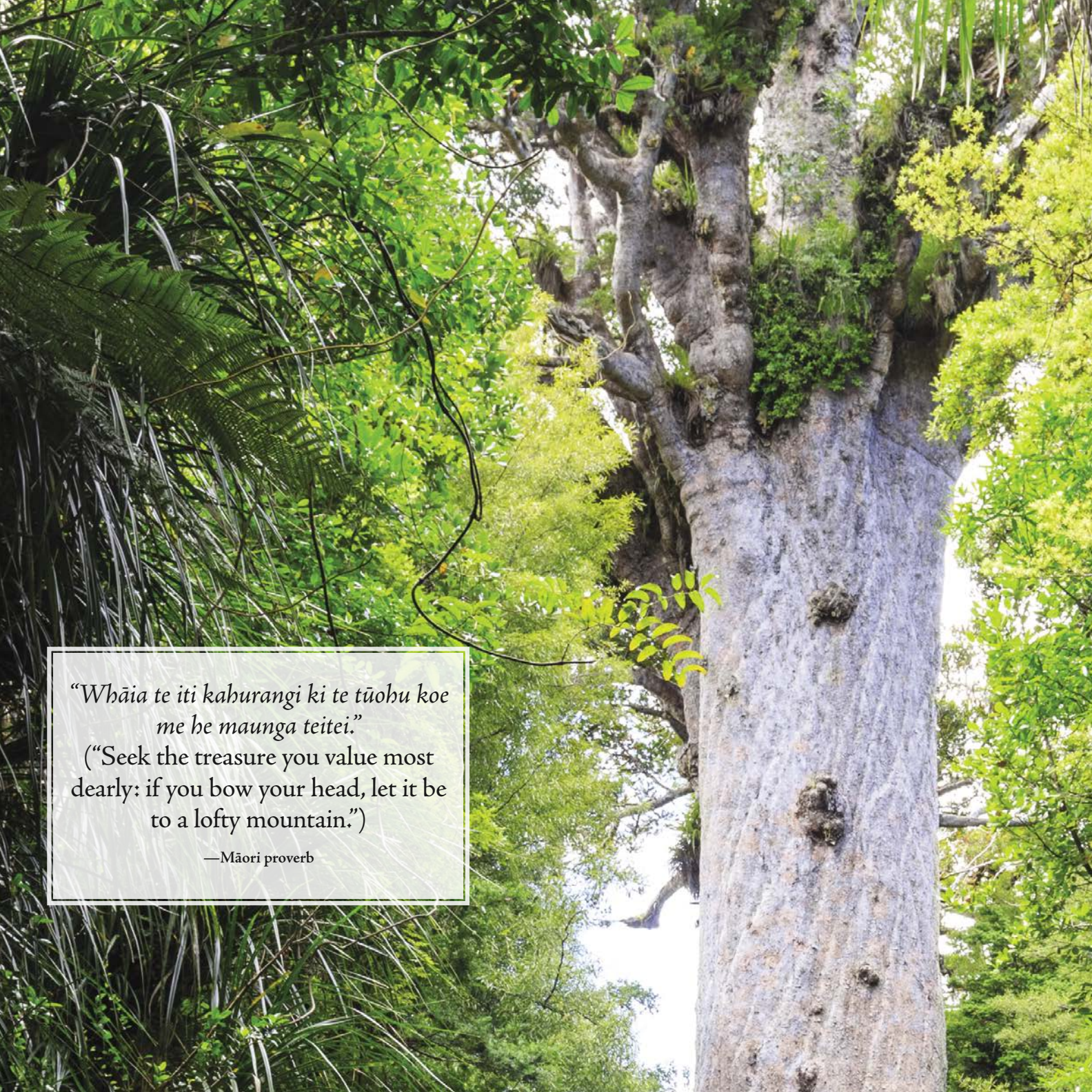
A Tuscan Tradition— The Italian Cypress

Lining the roadways of the undulating Italian region of Tuscany, Italian cypress trees stand like sentinels, a column of linear evergreen needles. The trees can live up to two thousand years and grow up to 70 feet tall, creating a distinct shape that has made them a staple feature in Italian gardens. Wood from the Italian cypress was used to create the doors of St. Peter's Basilica in Vatican City. Despite their connection with the imagery of the Tuscan countryside, the trees originated in ancient Persia or Syria and were transported to Italy by the Etruscan people centuries ago. They believed the tree to have supernatural properties, thanks to its evergreen and eternal nature. Etruscans often planted the tree near sacred burial grounds, willing the tree's strong essential oils to ward off evil spirits and facilitate safe passage to the afterlife. Because the cypress tree's wood is saturated with fragrant oils, it takes more time to decompose, making it an ideal material for fashioning coffins and other sarcophagi. Legend holds that the tree derives its name from a character written about by the poet Ovid. Cyparissus, a young mortal from the Greek island of Keos, mistakenly killed one of the Greek god Apollo's beloved stags. Devastated by his act, Cyparissus begged to weep forever. Apollo obliged, turning the boy into a cypress tree, his eternal tears becoming the tree's sap.

Tuscany, Italy







*“Whāia te iti kahurangi ki te tūohu koe
me he maunga teitei.”*

(“Seek the treasure you value most
dearly: if you bow your head, let it be
to a lofty mountain.”)

—Māori proverb



Tāne Mahuta, the Māori God of the Forest

When the ancestors of the native Māori people arrived in New Zealand from Polynesia, they were struck by the new and unfamiliar landscape, especially the forests filled with towering coniferous trees. In an effort to understand this new habitat, they assigned a deity to the towering plant life, and thus emerged Tāne, the god of the forest. In tribal traditions, Tāne is considered a child of his Earth mother, Paptūānuku, and sky father, Ranginui. Wishing to emerge from the darkness, Tāne is said to have leaned back against his mother and pushed earth and sky apart, allowing the light to shine through and reveal the lush floral offspring between the primeval parents. The species of tree that first captivated Māori settlers were kauri trees, enormous, long-living coniferous trees with small, narrow leaves and smooth bark. Kauri forests in New Zealand are ancient, some with fossil records dating as far back as 190 million years ago to the Jurassic period. New Zealand's Waipoua Forest is home to the country's largest kauri tree, known as Tāne Mahuta. The tree is dated to nearly two thousand years old and stands close to 170 feet tall. Because of kauri dieback, a fungus-like disease that spreads by foot traffic, visitors to the living legend must hose their shoes before walking on special walkways to protect and preserve this ancient god of the forest.

Waipoua Forest, New Zealand

The Liquid Gold of the Argan Tree

For thousands of years, argan trees acted as a “curtain of the desert” in southwestern Morocco. The gnarled, thorny trees extend their roots deep into the ground, stabilizing the soil and absorbing water, protecting the local environment from further desertification. But they are also famous for their fleshy fruit, which contains a nut housing an acorn-like seed from which precious oil can be gleaned. Goats, which are skilled at climbing the 30-foot-tall argan trees to eat the fruit, excrete the nuts, which are then often gathered by indigenous Berber women, dried and cracked open to reveal seed kernels. The kernels go through a process of roasting before being ground, mashed, or cold-pressed to produce the highly valued argan oil, the tree’s “liquid gold” used for centuries for culinary and cosmetic purposes. Local Berber people have long cultivated and used argan oil for the treatment of skin conditions, rheumatism, and heart disease. Now known to contain 80 percent unsaturated fatty acids and antioxidant properties, the oil is consumable, used as salad dressing and other food flavorings, and the global cosmetic industry has recently become interested in adapting argan oil for use in skin and hair care products. Unfortunately, the booming argan oil business has had unintended consequences for the trees. As income flowed into Moroccan agricultural communities, increasing the numbers of goats to eat the fruit and excrete the valuable seeds, the goats began over-consuming young argan saplings and damaging existing trees. The argan trees now enjoy protected status as part of a UNESCO biosphere reserve, and because income from the argan oil production benefits the local economy and the government is investing in planting more trees, local Berber populations are experiencing increased access to education and female leadership and, in turn, are promoting sustainable stewardship of the ancient argan trees.

Tree-climbing goats, Agadir, Morocco





The Shagbark Hickory

Found throughout the forests of the eastern and midwestern United States is the shagbark hickory. A deciduous tree whose oval-shaped canopy of leaves flare golden yellow as the seasons turn from summer to fall, this tree has earned its name thanks to the appearance of the bark on its trunk, which peels off in thick, shaggy strips. As the tree matures, the bark begins to curve upward in bands, often providing crevice homes for creatures like Indiana bats. The hickory gets its name from the Algonquin name for the tree, *pawcohiccora*. It produces a rounded nut with a four-part husk that ripens and falls to the ground during autumn. A popular food source among bears, squirrels, foxes, mice, birds, and other forest wildlife, hickory nuts can be eaten raw, boiled, or roasted to evoke a flavor profile between that of a walnut and a pecan. The bark of the tree is also a popular choice for smoking meats, and the tree's wood is strong and sturdy, making it a popular choice among early American settlers for constructing tools, furniture, and athletic equipment like baseball bats. Thanks to his tough reputation, US president Andrew Jackson, a major general during the War of 1812, was nicknamed "Old Hickory."

The Mythical Rowan

With serrated leaves shaped like eagle feathers, blood-red berries that burst forth in fall, and a pentagram-shaped marking at the base of the berries, the rowan tree is firmly rooted in old European legend and folklore. Its unique physical characteristics have led humans to connect it with mystical stories and nicknamed it the “witch tree.” A Celtic Tree of Life, rowans were frequently planted next to houses to protect the homestead and were often planted near cemeteries to ward off evil spirits and offer protection to the deceased. The tree’s creamy white flowers also led it to be affiliated with fairies in Ireland. Greek mythology features the rowan tree in the story about the goddess Hebe who lost her chalice of rejuvenating ambrosia to demons. Dispatched to recover the cup, an eagle lost feathers and drops of blood in the fray fight with demons; these became parts of the rowan tree. Norse legend describes how a rowan tree bent over a fast-flowing river to save the god Thor from being swept into the underworld. Other parts of the tree were adapted for human use as well, including the bark and berries, which were used to dye druid garments for use in lunar ceremonies. The berries also serve as an ingredient in alcoholic spirits such as wine, ales, cider, and Irish mead. Rowan berry jelly is made in Scotland as an accessory for meals featuring game. The berries also offer medicinal uses, from treating constipation to serving as a soothing gargle for a sore throat, to reducing inflammation and promoting longevity.







New Zealand's Christmas Tree

A gnarled tree with durable reddish-brown wood and spiky flowers that cover the tree like red pom-poms during the Christmas season, the pōhutukawa tree has become a symbol for the holidays throughout New Zealand. But before it was ever affiliated with the religious holiday, pōhutukawa was long considered a sacred tree by native Māori peoples. Māori legend holds that the mythical hero Tāwhaki fell to his death from the sky, his blood becoming the flowers of the tree. One of the most sacred pōhutukawa trees is found clinging to a cliff along the coast of Cape Reinga on the northwestern-most tip of New Zealand's North Island. The eight-hundred-year-old tree is believed to be a gateway to the underworld, where spirits pass through on their final journey. When European settlers arrived in New Zealand, the pōhutukawa became part of missionary services and holiday decorations. By the 1940s, 2nd New Zealand Expeditionary Force army chaplain Ted Forsman had composed a carol referencing the pōhutukawa during his capture by the German Afrika Korps, and the sacred tree was soon featured on holiday cards, in books and poems, and in photographs and paintings, becoming a lasting symbol for Christmas in New Zealand.

The Revered Ceiba Tree

Conical thorns cover the trunk of young *Ceiba pentandra*, or kapok trees—trunks that are dark green before shading to pale grey with swathes of brown bark. The deciduous trees have umbrella-shaped crowns and produce fruit that houses a silky, cotton-like fiber known as *pochote* among the Maya, who historically used the strands to create clothing. The fibers also encase the tree's seeds and provide a wispy mode of transportation and dispersal. As the trees mature, some reaching a height of 200 feet, their enormous trunks develop buttress-like supports, reminiscent of those found in Gothic-style cathedrals. A giant of Central and South American rainforests, the ceiba tree is the most revered tree in Mayan culture. Venerated as the Tree of Life, ancient Maya believed that the tree stood at the center of the earth and called the ceiba *yax che*, meaning “green tree” or “first tree.” They believed the towering giant linked the underworld with the human environment and the heavens. Images of the world tree exist in Mayan murals dating to the first century B.C.E. through the Late Postclassical Mayan codices of the early sixteenth century. The ceiba played a central role in religious ceremonies and sacred traditions and was used in cultural medicinal and holistic practices. The tree supports a diverse array of tropical wildlife, housing frogs, birds, and small mammals, while the ceiba's foul-smelling white and pink flowers attract fruit bats. The tree's lightweight and porous wood is ideal for creating dugout canoes and as a surface for wood carvings. While the fruit of the tree is inedible, the seeds contain a high volume of oil, which can be used to make soap, and holds potential for use as a biofuel.

Palm Beach, Florida, US







The Art of Rubber Tapping

Reaching 100 to 130 feet tall and living as long as one hundred years, the rubber tree reproduces when its fruits burst open, scattering seeds up to 100 feet away. At around six years of age the Amazonian tree is ready for harvesting and can be tapped for latex. Ancient Mesoamerican cultures like the Aztecs, Maya, and Olmecs were adept at adapting the natural resources of native plants and wildlife and using the gifts of the rubber tree wisely. This tree produced a milky white latex sap that was the perfect substance for creating balls, sealing shoes, and weatherproofing clothing. By cutting the tree and inserting a small tap, the liquid latex is released and can be combined with juice from nearby growing morning glory vines to create rubber of differing strengths. More durable rubber may have been used to create Aztec sandals, while bouncy rubber was ideal for creating the balls used in games that had religious significance—and may have ended in human sacrifice. Today indigenous Brazilian rubber tappers continue to fight to defend the trees and the diversity of the Amazon rainforest from overdevelopment and deforestation. Famously, Brazilian rubber tapper Chico Mendes fought to protect the rainforest from those who wanted to clear the land for cattle grazing. Today, rubber tappers engage in sometimes violent battles over protecting high-demand trees like mahogany and Brazilian walnut from illegal logging by criminal gangs.

Ko Lanta, Krabi province, Thailand

An Underwater Ice Age Forest

Imagine diving underwater and swimming through a world that hadn't been seen in sixty thousand years, when sea levels were 400 feet lower than they are today. Instead of proudly pointing up into the sky, the forest of cypress stumps and logs that made up the only known preserved specimen of a coastal ice age forest dot the ocean floor, fish diving among their wooden outcroppings. Low oxygen sediments prevent bacteria from decomposing the tree wood, making the preserved forest a treasure trove of information. About a year after 2004's Hurricane Ivan hit the US Gulf Coast, its giant storm waves washing away layers of sediment covering the trees, a local fisherman discovered the once hidden half-mile stretch of underwater forest. He shared the story with local environmental reporter Ben Raines but asked that the exact coordinates of the site be kept secret so as not to disturb the fragile ecosystem. Raines partnered with paleoclimatologist Kristine DeLong and began researching the site. Their first scientific expedition to the site happened in 2012 in an effort to gather rare data on ice age-era climate, plant, insect, and wildlife species. Raines created a documentary about the forest and hopes to have the site declared a national marine sanctuary.

Gulf Coast of Alabama, US







Puerto Rico's Forest of Clouds

The only tropical rainforest in the United States, El Yunque National Forest covers twenty-eight thousand acres in the rugged Luquillo mountain range in Puerto Rico. Taking its name from the indigenous Taíno spirit Yuquiyú, the forest is one of the oldest reserves in the Western Hemisphere. Seventy-five percent of Puerto Rico's virgin forest is part of the range, and it is home to more than 240 species of trees and plants as well as rare wildlife like the Puerto Rican parrot, one of the ten most endangered species of birds in the world. With rainfall happening up to four times a day—amounting to one hundred billion gallons of rainfall each year—the forest is the rainiest of all American national forests. The Taíno people, indigenous to the Caribbean islands and Puerto Rico, incorporated the forest into many sacred beliefs and traditions. The Taíno are said to refer to a peak in the middle of the forested range as *yuke*, meaning “white lands” in reference to the misty fog cover that often shrouded the looming hill. The deity Yúcahu is also connected with the region, known for overseeing agriculture, harmonious balance, and fertility. Yúcahu is believed to reside on the mountain El Yunque, where he did battle with Guabancex, the god of chaos and disorder, buffering the Taíno from his harmful storms. Because of its location along the country's east coast, the rainforest often takes the brunt of hurricanes and tropical disturbances, acting as a protector of the mainland. Most recently, El Yunque took a direct hit from the category 4 Hurricane Maria in 2017. While the forest lost much of its canopy, and nearly one-fifth of its trees were expected not to survive because of the impact of the storm, the forest is slowly beginning to regenerate, green sprouts emerging and rainfall supporting a resilient return to vibrancy.

El Yunque National Forest, Puerto Rico

The Stewards of the Amazon

Pristine. Untouched. As Mother Nature intended. Many picture the jungle of the Amazon as a pure land that evolved beyond the touch of human intervention. But, according to recent research, for more than eight thousand years the indigenous people living in the rainforest helped shape and influence the biodiversity of the forest with lasting impacts today. As people farmed crops that were useful to them, like the cocoa bean, maripa palm, and Brazil nut, they altered the ecology of the Amazon, cultivating these species in regions where people lived. Archaeological studies reveal evidence that indigenous peoples lived in groups along the banks of rivers that wind through the jungle, making use of certain trees and impacting the composition of the surrounding plant life. Observing how ancient civilizations promoted the growth of useful species reveals important information about modern efforts to preserve ecological prosperity and to reduce the harmful impacts of deforestation.







Thoreau's Forest Fire

Famous for authoring the seminal environmental memoir *Walden*, naturalist and transcendentalist Henry David Thoreau set an unintentional forest fire in 1844, a year before writing the book. During an April fishing trip in Concord, Massachusetts, with his friend Edward Sherman Hoar, the pair lit a fire in a tree stump over which they hoped to cook their catch. The spring season had proven to be unusually dry, however, and a strong wind whipped the flames, leading them to leap out of the stump and set fire to nearby grasses. Thoreau and his friend earnestly tried to stomp out the flames, but they spread quickly and reached a nearby patch of forest. The flames began consuming tall pines, so Hoar went to warn the neighbors and Thoreau ran to get help. The townspeople helped stymie the blaze, and, after charring three hundred acres of woods, it was finally tamed. Scolded and scoffed at for his carelessness in setting the fire, Thoreau escaped to his cabin on the shores of Walden Pond near the same woods that burned, where he immersed himself in nature and ended up writing his environmental tome.

“You only need to sit still long enough in some attractive spot in the woods that all its inhabitants may exhibit themselves to you by turns.”

—Henry David Thoreau, American author, philosopher, environmentalist

Walden Pond, Concord, Massachusetts, US

A Cherry Namesake

Plump reddish-maroon cherries dangling from a green stem are a sure sign of summer. Biting into the soft flesh reveals a spritz of juice and a tender fleshy center. The pit is easy enough to remove, and the ripe fruit can be consumed by the handful. This favorite treat of nature is known as the Bing cherry, popular in produce aisles and farm stands around the country. The most produced variety of cherries in America, the Bing cherry got its name from a Chinese foreman named Ah Bing who worked for Quaker farmer Seth Lewelling. In the mid-1800s, Bing served as foreman of Lewelling's fruit tree nursery in Milwaukie, Oregon, where he oversaw a crew of thirty men and worked closely with Lewelling on grafting, propagating, and cultivating the trees. Stories of Bing's efforts on the farm describe him as instrumental in deriving the ideal variety of cherry, and his legacy lives on with famous cherries that bear his name to this day.







New Hampshire's Sunken Forest

When the tides are just right, and the perfect combination of wind and storms have eroded the sand, mysterious tree stumps appear along the shoreline of the New Hampshire coast in Odiorne Point State Park and Jenness Beach. Appearing only five times in recent history, the tree stumps are mostly cedar and pine trees, remnants of a forest that existed along the coastline, which previously extended 75 miles farther east than its current location. After glacial melting led to a rise in ocean levels, the forest became submerged, only to reappear under the right conditions. Still featuring all their rings, the trees have been dated to be three to four thousand years old and appear to have been more than one hundred years old at the time they were submerged.

Odiorne Point State Park, Rye, New Hampshire, US

Origins of the Wild Apple

A fall tradition, apple picking usually involves visiting a farm or orchard and strolling through evenly spaced rows of apple trees, plucking the fruit from trees expertly cultivated to produce specific colors, flavors, and varieties. But apples weren't always domesticated in such a linear, orderly fashion. In the 1920s, Russian plant biologist Nikolai Vavilov discovered a forest of wild untamed apple trees near the city of Almaty in the Tian Shan mountains of Kazakhstan and pondered about their connection to domesticated apples. Genetic research during more recent decades confirmed Vavilov's theory that modern apples originated from this wild grove. Now known as the birthplace of apples, scientists believe birds and mammals first transported apple seeds out of Kazakhstan. After the ancient Romans discovered apple trees in Syria, they further dispersed the fruit around the world. Today, Almaty displays its apple heritage with pride and preserves the last remaining wild groves of apples in the mountain range. There, diverse and untamed apples reveal flavors reminiscent of honey, licorice, and berries.

Almaty, Kazakhstan





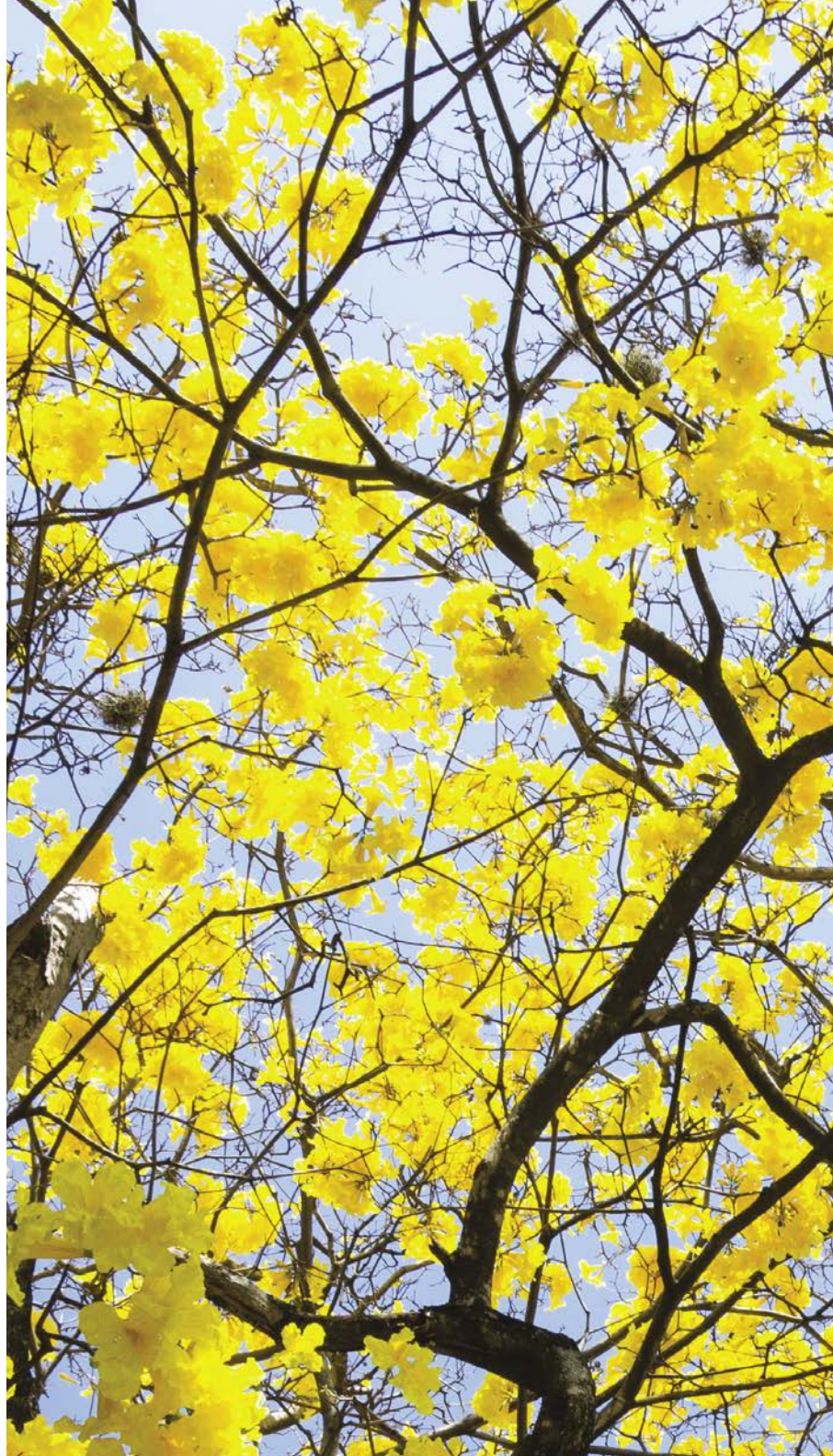


The Ice Cream Bean Tree

One night of the year the limbs of the South American *Inga edulis* tree explode with flowers that resemble translucent fiber-optic lights. They bloom for one night only when they are pollinated by bats, hummingbirds, and moths. Soon thereafter, a pod containing deep purple-black seeds that are covered by a filmy white pulp erupts and gives us the gift of the delicious guaba (pronounced “wuba”) fruit, also known as the ice cream bean. An important part of the diet of pre-Columbian indigenous people in Peru, the ice cream bean gets its name from the sweet vanilla flavor of the spongy white pulp encasing the seeds, making it a popular treat for people living in Central and South America, as well as for monkeys, birds, and other types of wildlife. As a member of the legume family, inga trees have practical uses in the environment and possess the ability to introduce nitrogen in the soil through root nodules housing *Rhizobium* bacteria. In doing this, they serve as natural soil fertilizers and are a popular choice for planting alongside crops to help foster healthy growing environments. Indigenous Amazonian people have also sheltered under the inga tree’s large smooth green leaves and used the tree for timber and fuel wood, as well as for medicinal purposes.

Ecuador's Flowering Guayacán

In southern Ecuador on the border with Peru, nature puts on a spectacular art show each year, but the exhibit lasts only one week. A species of flowering guayacán trees explode in tubular bright yellow blooms toward the end of late January and early February, signaling the start of the rainy season. The nearly one hundred thousand acres of trees bloom in near synchronicity, drawing thousands of visitors each year to the forest of Loja province, a United Nations biosphere reserve. After the blossoms fall to the ground, they are foraged by local livestock and goats, which end up producing more milk after consuming the saffron-colored blooms. The short-lived floral show is part of an adaptation that allows the trees to thrive in arid conditions. By remaining bare during the region's lengthy dry season, the tree is able to conserve water. After soaking up the first rains of the season and opening to bloom, the tree replaces the blossoms with leaves and podlike fruit containing small, winged seeds. Valued not only for their physical beauty, the guayacán flowers can be made into tea that treats a number of health issues.







The Ancient Fossil Forests of Antarctica

Known as one of the harshest and most barren landmasses on the earth, Antarctica is battered by frigid winds and extremes of daylight and darkness; it experiences 24 hours of sunlight during polar summers and unrelenting nightfall for the other half of the year. It's difficult to imagine this severe landscape harboring plant life, but in 1912, a team of explorers to Antarctica discovered the image of plant leaves embedded into hard rock. These were the fossilized leaves of *Glossopteris indica*, a prehistoric tree species, and they were the first evidence in modern times that showed how the frozen continent, which was once part of the supercontinent Gondwana, was once covered in lush, green forests. The woody *Glossopteris* plants are otherworldly, with tongue-shaped leaves that grew in thick mats. The plants are thought to have been very resilient, able to withstand extreme temperatures and weather conditions. More recent fossil discoveries reveal evidence of trees on the land dating back 260 million years. Scientists associate this time with a mass extinction event known as the Permian extinction, which many scholars believe was related to a massive volcanic eruption. Researchers analyzing the fossils are able to glean critical clues about how forests and other life-forms survived mass extinctions.

Houston Museum of Natural Science, Houston, Texas, US

The Hoh Rainforest's Hall of Mosses

A lush, verdant forest of Sitka spruce and Western hemlock trees, many blanketed in thick mosses, sits unassumingly along the Pacific coast on Washington State's Olympic Peninsula. Drenched in nearly 14 feet of rain a year, this is the Hoh Rainforest, one of the Northern Hemisphere's most well-preserved temperate rainforests. A famous loop through these ethereal trees is known as the Hall of Mosses Trail; it winds along among giant trees, some as old as one thousand years. Because of the incredibly moist soil, many of these trees have stunted roots, which has caused them to topple, creating an environment akin to a graveyard of trees covered in hanging mosses and ferns. Visiting the forest during the rainy season may offer glimpses of two species of rare wildlife, the Roosevelt elk and the banana slug, the second largest species of slug in the world.

Hoh Rain Forest, Olympic National Park, Washington, US







The Persian Juniper Forest

In the Ziarat region of Pakistan are 270,000 acres of old-growth forest that contain some of the oldest living juniper trees in the world, some thousands of years old. The coniferous tree *Juniperus excelsa polycarpus*, or Persian juniper, bears small scaly leaves and bluish-black berry-like cones and is endemic to Central Asia. The old-growth forest where these trees make their home is prized for its ability to store large amounts of carbon and foster a diverse ecosystem that supports rare wildlife species including the Himalayan black bear and markhor wild goat. Because the trees are so long-lived, they are ideal specimens for researchers looking to understand past changes in climate and ecological conditions.

Spirit Little Cedar Tree of Lake Superior

A lone, gnarled cedar tree clings to a rock in Minnesota on the cusp of the US shore of Lake Superior. Known as Spirit Little Cedar Tree, or *Manido Gizhigans* in the native language of the Ojibwe people of Grand Portage National Monument and Indian Reservation, the tree has mystical associations and is considered sacred by tribal members. Close access to the tree is limited only to tribal members, and hiking down to the tree unaccompanied by a member of the tribe is prohibited. According to Ojibwe historians, native people first observed the tree several centuries ago and revered it for its ability to thrive facing tough conditions at the lakeshore, embodying the qualities of determination and resilience. Nicknamed the “witch tree” by locals, the tree has some of its roots exposed along the outside of the rock, while other roots extend deep within the rock, anchoring the tree to its location for some three to four hundred years. Even today Ojibwe people leave offerings of tobacco at the base of the tree, seeking blessings of safe travel before embarking on their journeys across Lake Superior.

Lake Superior, Minnesota, US







Africa's Sacred Sycamore Fig

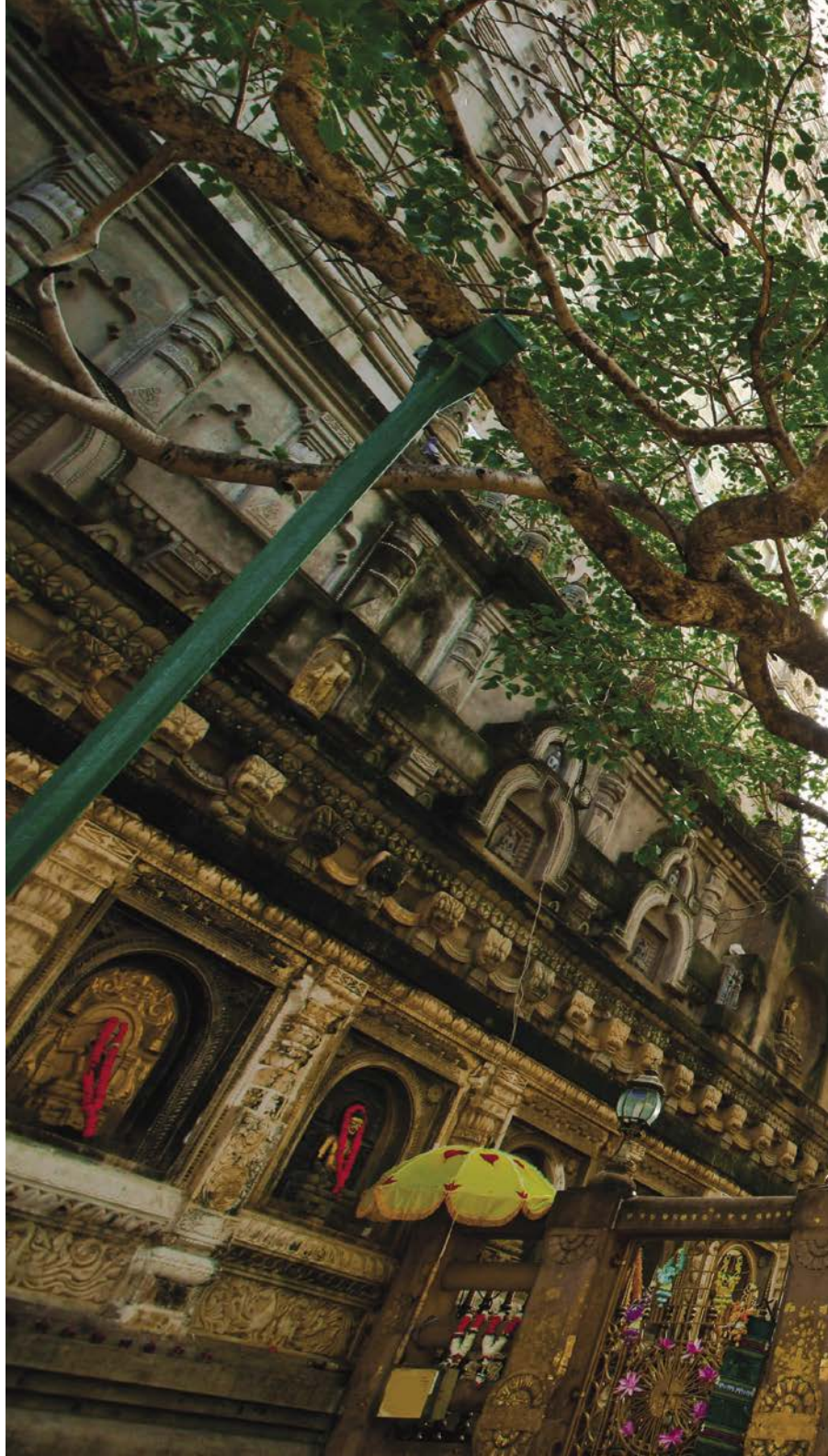
Known as the Fig of Pharaoh and the tree of both life and love, trees of the species *Ficus sycomorus* were considered sacred in ancient Egypt as far back as the third millennium B.C.E. The tree, native to Central Africa, produces a tasty fig fruit that is displayed on the tree in clusters of fleshy red bulbs. In the absence of pollinator wasps, ancient Egyptian farmers helped propagate the species and ripen the fruit by gnashing the figs with a blade. The tree soon became pervasive in Egyptian culture and cuisine. Pharaohs went to the grave with dried figs in sarcophagi made from sycamore fig wood. Ancient Egyptians also believed Hathor—goddess of the sky, women, fertility, and love—would emerge from a fig tree as they were welcomed into heaven. With its spreading branches and dense crown, the sycamore fig was often represented in Egyptian mural and tomb paintings. Kenya's Kikuyu people also venerate the sycamore fig, praying underneath its boughs for blessings of rain and abundant crops, as well as fertility and healthy babies. Known as *Mugumo* in their native language, Kikuyu people would hold council meetings of elders under the trees, as well as perform rituals and sacred ceremonies. This eco-spiritualism has helped strengthen native Kenyan communities as well as the local environment as the fig extends its roots deep into underground rocks, stabilizing the soil from landslides and bringing subterranean water to the surface.

Central Africa

The Bodhi Tree of Buddhism

A Nepalese prince born in the sixth century B.C.E., Siddhārtha Gautama is said to have attained enlightenment, becoming the Buddha, after meditating under a fig tree in Bodhgaya, India. That tree became known as the Tree of Enlightenment, or the Bodhi Tree, and the site where it took root has been considered both a sacred site and symbol among Buddhists for thousands of years. The Bodhi Tree at Bodhgaya today is believed to be a direct descendant of the same tree under which the Buddha attained enlightenment many thousands of years ago and continues to be a major Buddhist pilgrimage site. The mythology surrounding the tree links the tree's birthday with that of the Buddha. It is believed to live as long as the earth lives and that the place where it grows will be the last site to be destroyed at the end of time and the first place to reappear when the world is reborn. As a symbolic "world tree," the Bodhi Tree represents the journey of life from small seed to maturity. Buddhists practice a Bodhi Tree meditation as a way to contemplate the mysteries embodied in the tree, and its iconography features an image of the tree itself and its reflection, representing the many aspects of life and emotion. Descendants of the original Bodhi Tree are found at Buddhist temples around the world and serve as a lasting symbol and representation of the birth of a faith and journey to enlightenment.

Bodhgaya, Bihar, India









Sri Maha Bodhi Tree

Planted in the Sri Lankan city of Anuradhapura in the year 288 B.C.E., the Sri Maha Bodhi Tree is one of the oldest living sacred fig trees in the world. It grew from a cutting taken from the same Bodhi Tree in India under which Siddhārtha Gautama gained enlightenment and established the foundations of Buddhism. In the thirteenth century, the tree was encircled with bonfires to protect it and ward off elephants and other wildlife after the city was burned and jungles began encroaching. That event is marked in Anuradhapura today with a procession known as Daramiti Perahera. Today, the tree is housed within a temple and continues to serve as a symbol of enlightenment under which Buddhists meditate and local political leaders pray for guidance.

Anuradhapura, Sri Lanka

Thai Tree Spirits

The trunks of looming evergreens are wrapped with brightly colored ribbon throughout Thailand. At the foot of these trees are offerings arranged on a small altar: fruit, water, juices, and other items. The *Hopea odorata* tree, also known as takian, is considered a sacred tree among many Thai people and is associated with the spirit Nang Ta-khian. It is believed that the benevolent Nang Ta-khian inhabits the tree and can transform into a human form; thus, it is considered forbidden to cut down takian trees. Only after performing a ritual ceremony in which they ask for Nang Ta-khian's permission can monks fell one of these trees. Offerings of colorful silk, fruits, and other treats are given to the tree in exchange for blessings of fertility and healthy pregnancies, as well as safe travels, wealth, and abundance. Also known for its healing properties, takian tree sap can be used to treat wounds, and the astringent bark can treat inflammation.

Nang Ta-khian Shrine, Thailand







The Karma Puja Karam Festival

As summer gives way to autumn in the Indian state of Jharkhand, tribal communities prepare to celebrate Karma Puja, a spiritual and religious festival welcoming a good harvest and honoring the deciduous karam tree, which represents the god Karam-Devta. The 15-day festival begins on the eleventh moon of the Hindu month Bhadrapada, which corresponds to August–September on the Western calendar. It celebrates fertility and an abundant harvest, honoring the karam tree and seeking nature’s good fortune as the seasons turn. Village youth collect branches of the karam tree along with various fruits and flowers. To kick off the festival, women pound rice flour that will be used to make sweet treats shared among neighbors. Dancers with yellow flowers tucked behind their ears participate in a celebratory dance and pass branches of the karam tree to each other. After washing a karam branch with milk and rice beer, celebrators place the branch in the middle of the ceremonial space and worship it, seeking blessings from Karam-Devta for the coming season. Once the festival ends, the branch is submerged in a river or underground, where it is believed to protect and bless the local community.

Jharkhand, India

Sacred Serbian Zapis Trees

Throughout Serbian villages, sacred trees known as *zapis* trees are marked with a distinct carving of a cross and serve as the site of ceremonial rituals. Often large oaks are chosen as *zapis* trees and serve as the location for village celebrations; personal rites like marriages and baptisms; and veneration where blessings for good fortune, health, and abundance are requested. Stone altars serve as locations for ritual offerings to the *zapis* trees, which are often fenced in and enclosed for protection and further reverence. Before church structures were developed as Eastern Orthodox Christianity spread through the region, *zapis* trees served as the location for early religious traditions among Serbian people. A *zapis* tree is so respected that it is forbidden among locals to cut one down, and even the fallen bark from a *zapis* tree often remains untouched on the ground.

Desimirovac, Kragujevac, Serbia







The Tradition of the Badnjak

Branches of oak trees, full of distinct brown rustling leaves, are piled high on tables in Serbian Orthodox churches during the holiday season. Part of an old-world tradition that lives on today, the badnjak is an integral part of Serbian Christmas celebrations that promises abundance, good fortune, and vitality for the year ahead. Traditionally, the man of each household would select a young oak tree or oak tree branch on Christmas Eve morning to serve as the badnjak. Slogging through the winter snow, the men would look for either a turkey oak or another type of oak tree. Facing east, the men would toss grain at the tree before greeting it with the sign of the cross and a prayer. Felling the tree with an axe, the badnjak is brought back to the home and placed near household areas where abundance is sought. Once inside the house, the badnjak is leaned upright against the house beside the front door. Traditionally, logs from the tree were doused in wine and covered in wheat and blessed before being burned in ritual commemoration of the annual cycle of death and rebirth. And, since the 1990s, the Serbian Orthodox Church has organized community burnings where all locals can contribute oak branches to the fire. Once the badnjak burns through, the Christmas festivities commence.

Pile of badnjak at a Serbian market

Malaysian Forest People

The nomadic Batek people of Peninsular Malaysia are deeply connected with the forest environment. Gleaning from it a source of shelter, sustenance, and spiritual meaning, they inherently live as guardians of their ecosystem. One of around 20 indigenous ethnic minorities of Malaysia, the Batek are part of a group known as *Orang Asli*, Malay for “original people.” They dwell under the trees in the lowland forests and have intimate knowledge of hunting, traveling, and living within Malaysia’s rainforest jungle. The tribal dwellings, trails through the jungle rainforest, and rivers are all of supreme importance to the Batek. They pay close attention to natural markings and signs such as forks in rivers, the way a campfire smoke curls as it burns, and the strike of lightning on a tree, as supernatural symbols that are key to divining meaning and guidance. However, as demand for palm oil increases, leading to rampant logging to clear the way for palm plantations, and efforts by the Malaysian government to assimilate the native people accelerate, the Batek and other indigenous Malaysian people who make their homes in the tropical forest must fight to maintain their traditional foraging lifestyle within their beloved forest home.

Orang Asli tribe, Taman Negara National Park, central Malaysia









Legends of the Wishing Tree

In a tradition dating to the 1700s, townspeople in North Wales, United Kingdom, would press coins into beech and holly trees with a wish, just as one would when tossing a penny into a fountain. Some of the trees are literally covered in coins, stemming from a centuries-old legend that if you were ill and lodged a coin in the bark of a tree, the tree would take on the illness in your stead. Others believed that wishes would be granted once the coin pushed past the bark into the tree's wood. The coins resist theft thanks to an additional legend saying that anyone who removes the money will assume the illness of the person who placed the coin. Wishing trees are found throughout the United Kingdom and other parts of the world, taking the form of strips of paper or fabric hung from tree branches. Not far from Wales in Scotland are trees covered in rags. Known as cloutie wells, a spring or well, usually with a tree nearby, is considered a wishing well. Scots dip strips of cloth known as clouties into the well and then tie them to the tree branch, all the while making a wish seeking intervention from the spirit of the well. As the rag disintegrates on the tree branch, so does the ailment for which the wish was made.

Wishing tree, Cornwall, UK

Wassailing the Apple Trees

Bolstered by the popularity of cider, the ancient Anglo-Saxon custom of wassailing, the tradition of singing to apple trees in the dead of winter in search of a bountiful harvest, is experiencing a resurgence. Following a parade to an apple tree, a piece of bread is dipped in mulled cider and is then raised up and placed on the tree's branches in hopes of inviting benevolent spirits. Cider is poured around the base of the tree, and drums and other loud noises are used to ward off evil spirits. Singing and merriment commence in an ode to a rich apple harvest. Traditionally, wassailing events occurred on Twelfth Night, and more recently they happen in late January, after the holiday festivities have passed and when winter is especially dark and bleak.





“Here’s to thee, old apple-tree,
Whence thou mayst bud, and
whence thou mayst blow!
And whence thou mayst
bear apples now!
Hats full! Caps full!
Bushel-bushel-sacks full,
And my pockets full too!
Huzza!”

—“The Wassail Song,” Devonshire carol



Brehon Tree Laws

Valued for their practical and useful purposes, and deeply entwined with spiritual beliefs and practices, trees were prominent throughout Celtic culture and were regarded as sacred. The Celts cherished their trees so much that an ancient native legal system, Brehon law, provided consequences and guidance for acceptable behavior, as well as protected many species of trees. The fine for felling a “chieftain” tree such as an oak was similar to the fine for killing a prominent human in the community. Segregated by status, the law divided trees into nobles, commoners, lower divisions, and bushes, and outlined fines and other dues required if someone inflicted damage on the trees. Noble chieftain trees, for example, included sacred species such as oak, hazel, holly, yew, and ash. Willow, rowan, birch, and elm were among the next level of peasant trees.

Immortal Peach Tree of China

With roots in Taoist mythology, the peach is considered a divine fruit, bestowed with the power to grant youthfulness. Blessings are believed to reside in the tree's blossoms, and the wood is deemed to be a useful tool in warding off evil. The peach tree, which represents immortality and longevity, is also associated with deep feelings of love, and Chinese couples traditionally bask in its fluffy rosy pink blossoms when they bloom each spring. A valley of nearly six hundred thousand peach trees blossom in Pinggu near Beijing each spring, carpeting the valley with pink cotton candy flowers. It was once a record holder for the world's largest area of cultivated peach trees, but other orchards in Guizhou and Tibet are now vying for the same title. The Beijing Botanical Garden also hosts an annual festival celebrating its seventy varieties of peach trees.

Peach trees facing Mt. Namjagbarwa, Tibet







Sacred Trees of Alishan

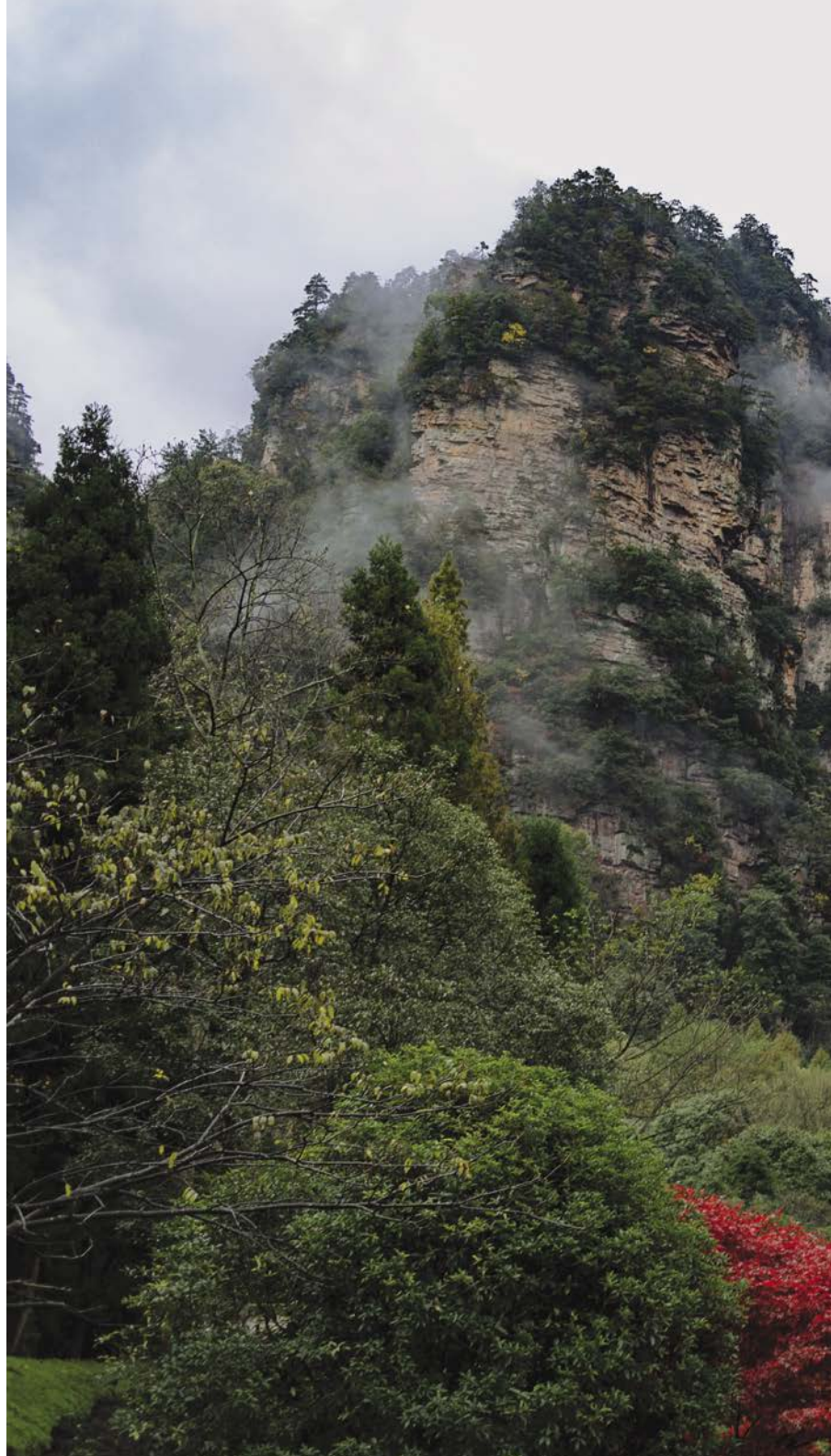
High in the mountain hills on the island of Taiwan is a forest area home to sacred cypress trees shrouded in cloudy mist. One of these trees was a sacred red cypress tree known as Shenmu in Mandarin that stood more than 7,000 feet above sea level and was believed to be more than three thousand years old. Revered by the indigenous Tsou people for generations, the imposing tree was more than 173 feet tall and withstood typhoons and earthquakes during its lifetime. Even after it was struck by lightning in 1956 and caught on fire, burning from inside out, it maintained its precarious position for decades to come. Finally in 1997, the tree fell during a rainstorm, and the forest service laid the tree down; it is now viewable by a pavilion that has been built alongside the supine tree trunk.

Taroko National Park, Taiwan

China's Feng Shui Forests

Hidden among fourteen provinces throughout central and southern China are forests that have been tended to by the careful hands of local villagers. Known as feng shui forests, or *fengshuilin*, the forests are examples of how the ancient practice of “wind–water,” or feng shui, was used to assess the most auspicious locations for designing dwellings and other community structures in alignment with life-sustaining energies known as *qi*. As the formal practice of feng shui was banned during the thirty years following the establishment of the People's Republic of China in 1949, rural villagers quietly took on the task of stewarding local forests for the benefit of the whole community. A village structure is situated at a point known as *xue*, an ideal location where forces of yin (feminine) and yang (masculine) energies find balance. Protected by mountains and often at the base of floodplains, this strategic placement helps facilitate positive energy and natural environmental cycles around the village and, as a key factor in this harmonious layout, feng shui forests help regulate wind and water flows through and around the rural settlements. Most *fengshuilin* are no more than several acres in size, but within that range they possess a great deal of biological diversity and some of the oldest trees of their kind.

Zhangjiajie National Forest Park, China









Showers of Gold

Throughout the American Southwest, a perky tree harkens the end of the brief winter rainy season and start of spring with showers of golden flowers. Spanish for “green stick,” the paloverde tree’s branches cascade with flowers and leaves in March or April, but only for a brief moment in time. As soon as summer heat radiates on the trees, their leaves begin to drop, and the trees remain bare until the coming of the next season’s rains. Despite its lack of leaves, however, the spunky paloverde has developed an ability to perform photosynthesis in its green bark, allowing it to thrive despite being bare. One species of the tree, blue paloverde, was traditionally a staple of Native American diets. Consuming the seeds and seedpods was common, and numerous species of wildlife have also found the paloverde a source of sustenance. The plants, which can live up to four hundred years, are also the primary nurse plant for baby saguaro cacti, providing the catci with shelter and shade in the otherwise unforgiving desert environment.

Four Peaks, Phoenix, Arizona, US

Illuminated Candlenut Tree

Standing out among the dark foliage of tropical Hawaiian forests are trees that grow up to 80 feet high, with lighter, silver-green leaves and round green fruit housing striking dark nuts. Introduced to the Hawaiian islands by Polynesian settlers, the kukui tree, also known as the candlenut tree, has become a lasting symbol of Hawaiian life and was designated the official state tree in 1959. Called the candlenut tree because early island inhabitants often used its nuts for candles, the word *kukui* actually translates to “light” or “torch.” Its light-giving properties also gave the tree spiritual significance, and it is a symbol for peace, protection, and enlightenment. Believed to be the embodiment of the god Kamapua‘a, the pig god and lover of the fire goddess Pele, the tree factors prominently in traditional cultural ceremonies and rituals. The blossoms and hard black nuts are frequently used in Hawaiian leis worn for protection and blessing, and the tree was also extremely useful for creating material used in canoes. The tree’s wood was carved into a figurehead placed at the front of the boat, and the seed could be burned, the soot becoming a dye used to decorate the exterior of the ship in intricate designs. Gum from the tree was used to waterproof the canoe, and once on water, the seeds were chewed and spat on the surface, calming ripples and providing a clear view to see fish below. The tree’s enormous significance in traditional Hawaiian culture is maintained today, with protections extending to sacred groves of kukui trees on the island of Molokai and plans to plant more trees in reclaimed island areas in the future.

*“The seed was sown. It budded, it blossomed. It spread out and budded again
and joined line on line, like the candlenut strung on one stem. ’Tis lighted.
It burns aglow and sheds its light o’er the land.”*

—Polynesian *’ōlelo no’eau* (proverb)

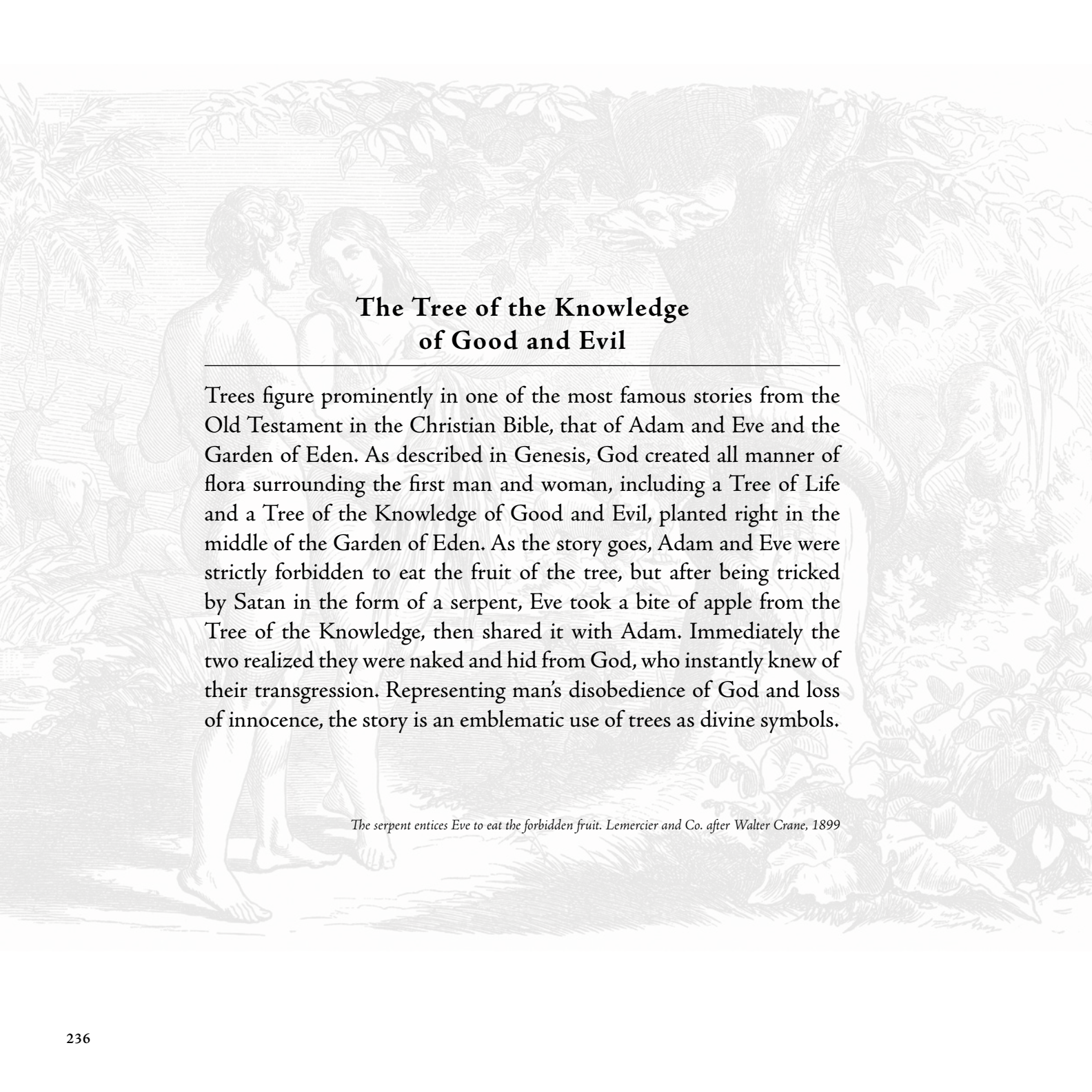






The Holly Tree, Ruler of Winter

Characterized by pointed leaves of thick, dark green stock with bright red berries and delicate, small white flowers that bloom during late spring and early summer, the holly tree is rife with symbolism for strength, everlasting life, and endurance during the dark of winter. A counterpart to the wise oak, which rules over the light half of the year, the seasons of spring and summer, ancient Celts believed the holly to oversee the dark half of the year during fall and winter. Druids considered cutting a holly tree to be bad luck and valued the tree for its protective powers. Believed to shield against lightning strikes, holly was often planted next to houses to ward off unexpected electrical disasters. Holly boughs were also used to decorate Roman halls during Saturnalia celebrations honoring the god of agriculture and harvest. Later adapted by Christians and widely featured in Christmas celebrations, the bright red berries are reminiscent of Jesus' blood, and the thorny leaves are symbolic of Jesus' crown of thorns. Birds depend on the tree as a vital source of food during winter. Medicinally, the leaves can be used to treat dizziness and fever, and the tree's wood is valued for carving and is used for inlays in furniture and musical instruments.



The Tree of the Knowledge of Good and Evil

Trees figure prominently in one of the most famous stories from the Old Testament in the Christian Bible, that of Adam and Eve and the Garden of Eden. As described in Genesis, God created all manner of flora surrounding the first man and woman, including a Tree of Life and a Tree of the Knowledge of Good and Evil, planted right in the middle of the Garden of Eden. As the story goes, Adam and Eve were strictly forbidden to eat the fruit of the tree, but after being tricked by Satan in the form of a serpent, Eve took a bite of apple from the Tree of the Knowledge, then shared it with Adam. Immediately the two realized they were naked and hid from God, who instantly knew of their transgression. Representing man's disobedience of God and loss of innocence, the story is an emblematic use of trees as divine symbols.

The serpent entices Eve to eat the forbidden fruit. Lemercier and Co. after Walter Crane, 1899



A photograph of a forest path lined with large redwood trees. The path is made of dirt and is bordered by a rustic wooden fence. The trees are tall and have thick, textured bark. Sunlight filters through the dense green canopy, creating a dappled light effect on the path and the forest floor. The overall atmosphere is serene and majestic.

“The clearest way into the Universe
is through a forest wilderness.”

—John Muir, Scottish-American writer, conservationist, and naturalist



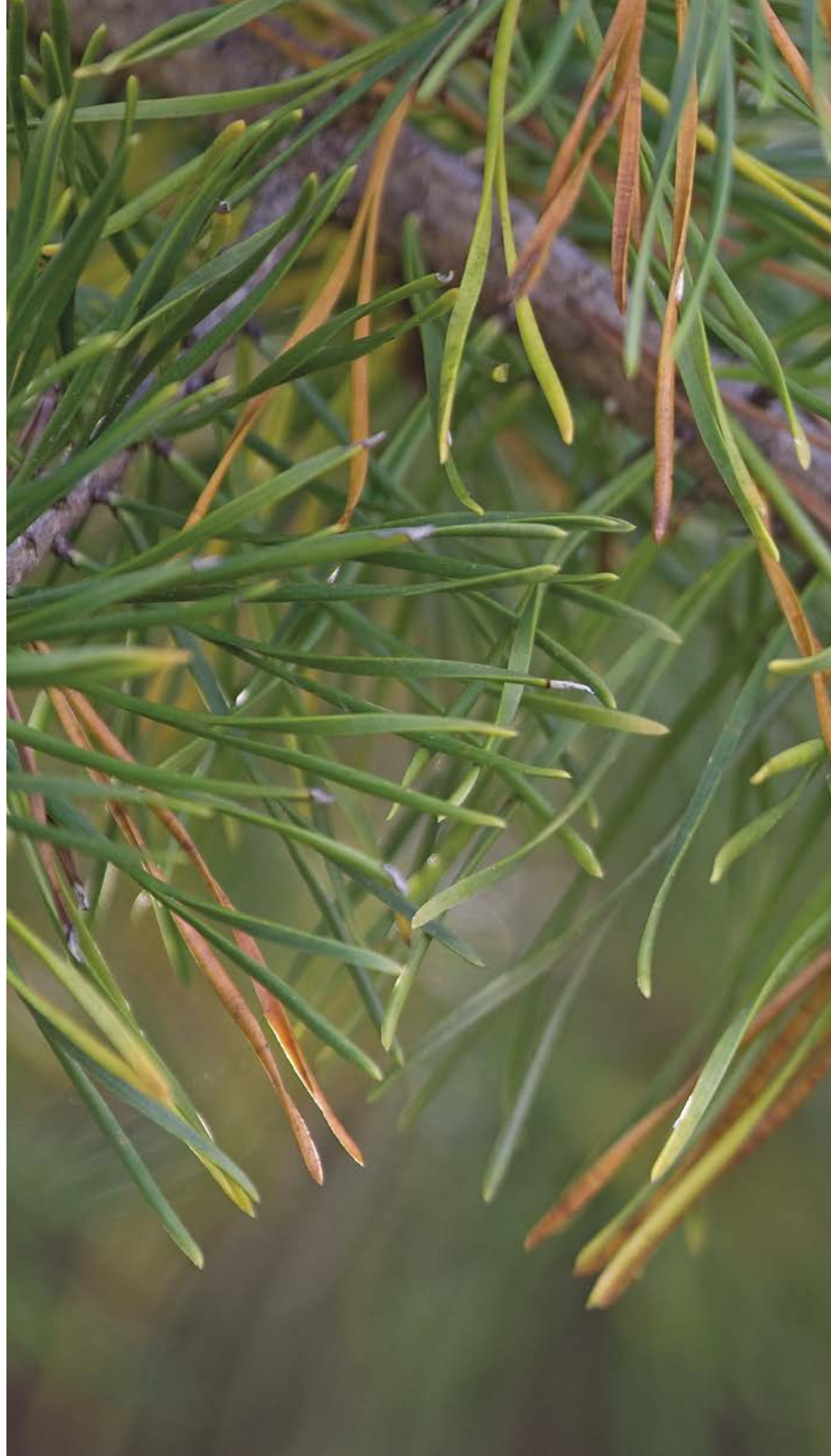
A Love Affair with Trees

One of America's iconic nature writers and conservationists, John Muir had an unstoppable, passionate connection with nature. Born in 1838 in Scotland, Muir moved with his family to Wisconsin around the age of 10. His minister father was very strict, keeping his children on a tight schedule of chores and requiring them to memorize the Bible. In his little free time, Muir began roaming the fields and woods of his home, birthing a love of nature and the outdoors. He attended the University of Wisconsin for a few years before taking a job at a factory where he sustained an injury that left him blind for a month. The life-changing experience altered his course, and he set out to explore the country, much of it by foot. Ending up in California's Sierra Nevada mountain range, he began writing with passionate fervor about his observations, publishing three hundred articles and ten major books recounting his travels and divine view of nature. Instrumental in the creation of many American national parks, including Washington State's Mount Rainier, Arizona's Petrified Forest, and California's Sequoia and Kings Canyon and Yosemite National Parks, Muir's legacy lives on through the Sierra Club and a grove of redwoods north of San Francisco known as Muir Woods National Monument.

Muir Woods National Monument, California, US

Lovely Loblolly Pine

Throughout the southeastern United States, enormous pine trees display outstretched branches that sway in the wind like the arms of a dancer. Featuring thick, deeply furrowed bark that grows on the trunk in patches, the loblolly pine can live more than 150 years and usually stands around 80 feet tall. The tree bears long, bluish-green needles and clusters of brown pinecones, which serve as a source of shelter and sustenance for woodland wildlife such as deer, beaver, squirrels, chipmunks, and mice, as well as birds like mourning doves, nuthatches, woodpeckers, and the American bald eagle. A notable grove of loblolly pines in Bastrop County, Texas, is known as the Lost Pines Forest. Appearing among barren rolling hills, the 13-mile stretch of more than six thousand acres of loblolly pines grows more than 100 miles from another genetic match of trees from the East Texas Piney Woods. According to native legend, the trees were separated after a homesick bride had her groom retrieve seeds to plant a forest with trees she grew up with. Scientists attribute the twin groves to a prehistoric glacier that separated the trees.







The Survivor Elm

Symbols of strength, resilience, and survival, trees have come to be recognized and serve as lasting images of hope and comfort after tragedy strikes. One such tree is an American elm that stood in a parking lot near the site of the Alfred P. Murrah Federal Building in Oklahoma City. This tree was sought after by city workers who liked to park under the tree, taking advantage of its ample shade. After the tree sustained damage when the building was bombed in 1995, it was almost chopped down so investigators could obtain evidence from its trunk and branches. The 80-year-old tree quickly became a symbol of strength for survivors and first responders to the tragedy, and protection for the tree was immediately sought and granted, with the tree becoming a central component of the Oklahoma City National Memorial. Urban forester Mark Bays was charged with caring for the tree. The parking lot around the elm was removed to foster the tree's growth and develop a memorial site, and seeds from the tree were taken to produce seedlings, which Bays continues to distribute to communities throughout the United States in an effort to create a lasting legacy and memorial of hope and resilience.

Oklahoma City National Memorial, Oklahoma, US

Tractors of the Sky

In an effort to combat massive deforestation, scientists are developing wide-scale tree planting technology using drones. Flown over mapped-out targeted planting areas, drones hover about 6 feet above ground and fire germinated seedpods at a precise speed to get the seeds under the soil. Early studies show successful species survival rates using drone planting as comparable to those of hand planting. Drones have been used to plant more than twenty-five thousand trees worldwide, but experts caution the technology must be used in conjunction with conservation efforts to mitigate the damage caused by unchecked deforestation, agriculture, and uncontained fires in the world's forests.

Tree plantation, Chile









Tradition of the *Tanzlinde*

During the era of the Holy Roman Empire, prominent linden trees in German cities were used by townspeople as the site for holding judicial courts. The tree was called a *Gerichtslinde* during these proceedings, and when not being used in this way the tree was known as *Tanzlinde*, or “dance linden,” as the location of town festivities. Often these trees feature dance platforms, built like scaffolding supporting the tree’s branches. With strong wood and bark, the tree became a symbol for the bonds of the local community, and, according to traditional myth, they symbolized a connection between earth and heaven, marking the passage of time through their seasonal changes. The heart-shaped leaves of the tree also drew couples and lovers to the tree with their signs of love.

Münzenberg Castle, Hesse, Germany

The Mango Trees of Mozambique

Serving as the locus for village celebrations and tribal deliberations, mango trees play a prominent role in African community life. A tree favoring tropical conditions, the mango is a deep-rooted evergreen tree that bears fleshy yellow fruits covered by a soft green skin. In the Manda Wilderness lakeshore villages of Mozambique, tribal decisions are deliberated and carried out under the boughs of enormous mango trees. Overseen by a village chief in conjunction with a local shaman, healer, and government secretary, villagers convene under the mango to discuss issues and find mutually beneficial resolutions. The tree is also viewed as a sacred vessel housing ancient spirits that can commune with and advise village chiefs. Seasonal celebrations also take place under the mango trees of Mozambique. From the *Chiombuo* ceremony in December, when villagers seek rain and an abundant harvest, to the *Chuoda* festival giving thanks for agricultural blessings, the tree is the site of numerous cultural occasions.









Guardian of the Redwoods

In 1997, Julia “Butterfly” Hill ascended the branches of an ancient redwood tree known as Luna in northern California where she remained in a small, tented platform for 738 days in an effort to raise awareness about the plight of ancient forests. Her more-than-two-year residence in the boughs of the tree gained worldwide media attention and helped preserve a nearly three-acre buffer around Luna and other nearby redwoods from a logging company. Hill became passionate about the survival of the trees after she sustained nearly life-threatening injuries in an auto accident and embarked on a journey of self-discovery to California. Here, she encountered the inspiring redwoods, becoming awestruck in their presence. Following her activism with Luna, Hill wrote a book about the experience, authored an environmental handbook, and cofounded a nonprofit social activism group.

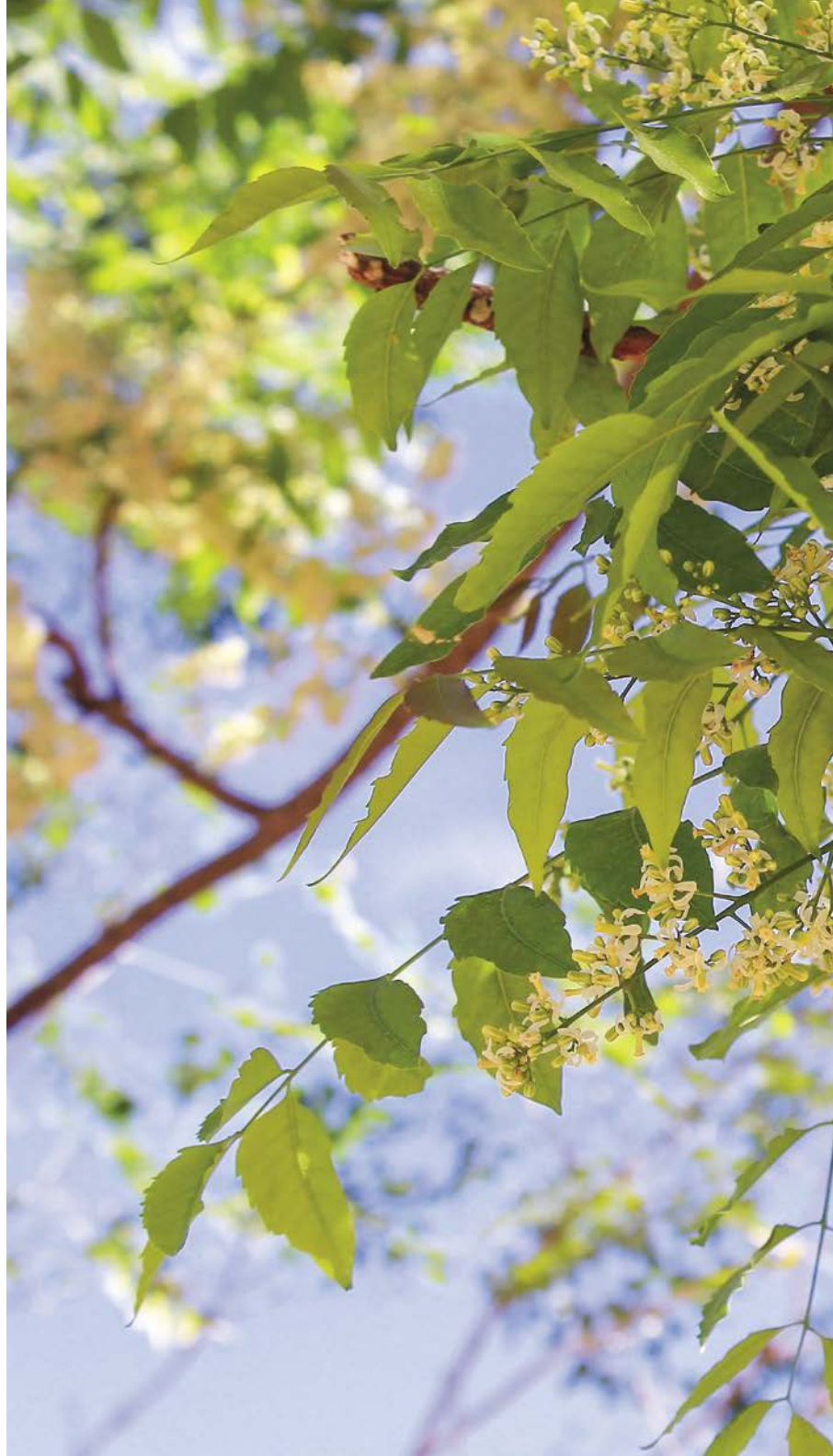
“We live in a world that is full of problems, and we are the solutions to those problems.”

—Julia “Butterfly” Hill, author and environmental activist

Giant redwoods, northern California, US

The Wonder Tree of India

Its small, aromatic flowers turn to soft, fleshy fruits that ripen from green to a vibrant yellow. Its bountiful canopy is made up of long, green, serrated leaves that shade the forest floor below and provide medicinal benefits to those who know to seek their care. The neem tree of India, a fast-growing evergreen related to the mahogany tree, lives for 150 to two hundred years and has been prized for its medicinal properties and cultivated for use among Ayurvedic practitioners for more than five thousand years. Known as “protector of the Indian village” or as the “village pharmacy,” neem has been referenced in Ayurvedic texts as having alchemical properties when used on the skin and as a useful tool for balancing Vata dosha, one of three mind–body types in traditional Ayurveda. Neem leaves are known for their antiseptic properties and have been used to treat infections, burns, insect bites, and neuromuscular pain. The tree’s delicate, creamy flowers are popular not only for their intoxicating jasmine-like scent but also because they can be cultivated as fresh additions to food, as well as dried and powdered before being added to rice, lentils, and other dishes. Ayurvedic practitioners use these flowers to soothe digestive ailments, headaches, and other skin issues. Neem twigs are popular makeshift toothbrushes with many built-in cleansing properties, and neem oil can be harvested for use in purifying cosmetic products like soaps and body oils and is also known to repel mosquitoes.









The Boab Trees of Kimberley

Throughout the western Australian region of Kimberley are trees that have played a significant role in Aboriginal culture for centuries. Known as boab trees, relatives of Africa's iconic baobab tree, the trees can live for up to 1,500 years and feature stout trunks and root-like branches. Also known as bottle trees, thanks to the look of their swollen trunks, the slow-growing tree features smooth, greyish-brown bark and green leaves that drop during the dry season. When the rains return, the trees bloom with large white flowers with pink undertones and oval-shaped nuts covered in a fuzzy coating. The nuts contain seeds that have high levels of vitamin C and, along with roots and leaves, have been consumed by indigenous populations for centuries. Aboriginal artists often used boab nuts as canvases for their intricate carvings and paintings, scratching away the dark outer coating to create designs. A famous boab tree near Derby, a town in the Kimberley region, was known for years as a holding cell for Aboriginal prisoners during the late 1800s. While researchers have disputed this claim, bones found inside the tree helped propel the myth that it was used as a prison tree. And in fact, many boab trees possess sacred significance among Aboriginal peoples who used the trees to store bodies of the deceased.

Cockburn Range, Kimberley region, western Australia

The Royal Sickle Bush

The sickle bush. The Chinese lantern tree. The Kalahari Christmas tree. No matter the name, *Dichrostachys cinerea*, a spiny, small tree is widespread throughout Africa. The tree's branches drip with feathered green leaves, and its dangling flowers exhibit a puff of furry pinkish-purple flowers above a mustard yellow seedpod. Known for its medicinal properties, the sickle bush has been used to treat a number of health issues, and its strong wood is a popular choice for tool handles and as a fuel source. Like other legumes, the tree deposits nitrogen in the soil and is adept at keeping the land fertile and stable. The sickle tree figures prominently in the Incwala festival of Swaziland. A harvest celebration held the fourth day after the full moon near the winter solstice, the kingship ceremony honors tribal royalty. On the first day of the festival, branches from the *lusekwane* sickle bush tree are cut under the light of the full moon. The branches are then woven together to form a private sanctuary for the king. Additional branches from other trees are cut and woven into the structure, where the king resides, receiving traditional remedies. The festival continues for several days, and when it concludes the *lusekwane* branches are removed and ritually burned, welcoming the year to come and celebrating the beginning of the harvest season.

Soutpansberg, South Africa









The Myths of the Sacred Ash

Ash trees hold mythological significance in cultures around the globe as sacred trees. In creation stories among the Algonquin people, the first humans emerged from the bark of an ash tree. Similarly, Norse mythology tells the tale of how man and woman were created by the gods from the ash and elm trees, respectively. The ash tree was believed to offer protections and was revered as a guardian tree in ancient Ireland, frequently found near Irish holy wells. In Britain, ash sap was often given to babies to heal various ailments, and children who were ill were undressed and passed through a cleft in ash trees in an attempt to cure them. Once the child was passed through, the cleft was bound with mud or clay as a symbol of healing along with the child. Ash was used also around the world to create various tools, weapons, and products like chariot axles. In the United States, white ash was a popular choice for baseball bats and in Ireland was used to create a wooden stick used in the sport of hurling. Today, the more than eight billion ash trees found in the United States are under significant threat from a small, shiny green beetle, known as the emerald ash borer. So far, the beetle has killed more than one hundred million ash trees in the United States alone. Fortunately, local cities and forest officials across the US have launched public awareness campaigns in recent years to equip citizens to be active partners in stopping the spread of the beetle and saving the ash trees.

The Symphony of Leaves

Beginning as a subtle whisper on the spring breeze before unfolding as a whoosh that ebbs and flows with the wind, a symphony of leaves accompanies the change of seasons. The Greek word *psithurism* literally translates to “the sound of leaves rustling in the wind,” and defines an ever-present ethereal experience among trees. A strong summer storm can violently shake a full tree, producing a deafening but still smooth rushing sound as lush tree branches submit to gusts. As summer fades into autumn, the music of trees so turns from playing supple, verdant fronds to crispy, rustling instruments that herald the changing tide. After the crescendo of fall, evergreen needles become muffled chimes, and the quaking aspen and birch leaves persist with their rustling through the dark of winter, an ever-changing composition for the whipping winds.





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The background of the entire page is a close-up photograph of tree bark. The bark is deeply textured with various shades of brown, tan, and grey, showing signs of weathering and peeling. In the center of the image, there is a light-colored rectangular box with a thin, dark border. Inside this box, the text is arranged in two parts: a section header followed by a paragraph of text.

About the Author

Andrea Sarubbi Fereshteh is a native of the mountains of Asheville, North Carolina, where she grew up climbing all the trees in her yard and hiking the Blue Ridge Mountains. She has been practicing yoga and meditation for a decade and leads weekly meditation sessions in the tradition of John Main, OSB. She writes for educational institutions, nonprofits, and freelance publications, and her work has been featured on the blog for the Association of Nature and Forest Therapy Guides and Programs. Her interest in blending mindful and contemplative practices led her into the woods of her current home in central New Jersey, where she has practiced forest bathing for the past two years. Her husband and three lively sons provide a constant source of joy and inspiration.